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EXTRAORDINARY RAVAGES OF

SYPHILIS AND MERCURY

ON THE

HUMAN COUNTENANCE.

By THOMAS WEATHERILL, *M.D. Liverpool.*

Representation of the Face of MARY LLOYD, *late of Mary's Court, Back Portland Street, Liverpool, as it appeared in the years* 1830, 1831, 1832, *and (with the exception of some slight improvement in the Mouth) as it is up to the present time.*

THE subject of the above sketch is 38 years old, a widow, the mother of eight children, and has been for the last five months an inmate of the Liverpool Workhouse. She always possessed tolerably good general health until the winter of 1829. In December of that year she applied for medical assistance to the Liverpool North Dispensary. She was found to be labouring under symptoms of *lues venerea* in those

parts that are usually the seat of the primary stages of this disease, became the patient of one of the honorary surgeons attached to this charity, and, as she reports, was attended principally by him for a period of not less than eight months, and was several times salivated under his directions. The disease, however, in defiance of the Doctor's *ablest powers*, it appears, crept on; though the affair now was no longer confined to the mischief of the original complaint. In addition to secondary symptoms, the skin was violently beset with mercurial eruptions; in short, her throat, her gums, mouth, and fauces, her nose, eyes, and skin, were each and severally attacked by the combined forces of syphilis and mercury, and with so much virulence, that her medical adviser, after this long campaign, with a most inveterate foe, now recruited also by such a formidable ally, growing no doubt weary of the contest, fled precipitately from the field in despair, scarcely allowing himself time to smooth his retreat with the excuse, that "*he could do nothing more!*"

I shall now endeavour to convey some idea of the situation of this female after the "Dispensary Doctor" had done his best, and had taken his departure from her. *Look at the picture my pencil has pourtrayed—sans* eyes, *sans* nose, *sans* mouth, and the remaining features of her face otherwise most horribly disfigured with vile sores and running wounds! Hardly anything human is there left. Eyes walled up by common integument,—nose frittered away by the ravages of syphilis and mercury! The teeth, most of them, are no more; the gums, palate, and, indeed, the whole interior of the mouth and fauces (they cannot be inspected), must be in a terrible condition! The lips are sealed together so completely, that not a demarkation, not a vestige of them, remains to tell the tale that they once existed! What is left of the mouth is entered by a circular opening, where it is supposed was once the left commissure, no larger in circumference than a goose-quill! Through this passage this truly pitiable, this mangled creature, receives her daily food. The faculty of hearing is much impaired. In a word, her person and constitution are frightfully mutilated—torn to very rags and tatters.

Some benevolent persons were in the habit of visiting this poor sufferer, and administering to her wants, which led to the circumstance of her being seen by several medical practitioners. A change of air was recommended, together with a milk diet, arrow-root, wine, and porter; the dietetic part was to be assisted medicinally by the use of sarsaparilla, guiacum, and the like, thus, if possible, to patch her shattered frame.

She was removed a short distance into the country, across the river Mersey, and, through the kindness of a gentleman, supplied with everything necessary to render her situation as comfortable as it was possible then to make it. After being about three months from home, she returned to her old residence invigorated in strength, and capable of walking a considerable distance without any other assistance than a guide. In appearance (saving her face, which, no thanks to the Dispensary, also had somewhat improved,—some of its former ulcerations having totally healed up, and others having become less extensive, less offensive, and less virulent) she was almost like a new creature.

Early in last autumn she was, from an attack of the Asiatic cholera, bereft of her husband, and left in a state of pregnancy! She became a resident soon after this event in the Liverpool workhouse, and there, without any material change in her health, passed through the full period of gestation, and gave easy birth, in March last, to a fine healthy-looking boy,—not a speck, spot, or blemish, of any description, could be discovered on any part of whose body. From the diseased and debilitated state of the mother, the child, after she had suckled it eight or ten days, was removed from her, and nursed in another part of the house. At the expiration of three weeks, being up to that time apparently, in all respects, very healthy, it died rather suddenly of convulsions.

I saw the patient for the first time in January, 1831, and was so struck with the phenomena of the case, that I transferred her likeness at the moment upon paper. Since then I have frequently seen her, and occasionally urged, especially whenever the skin was tolerably free from ulceration, that there was a probability both of restoring her sight, and again freeing her mouth by an operation; but she would not consent to the undertaking; she placed great reliance upon the efforts of nature, and had been told they would sooner or later very likely open of themselves. The sight, particularly of the left eye, I believed to be not much injured, from the fact that she could perceive the flame of a candle, and discriminate between light and dark objects; the balls of the eyes moved in their sockets, and—through the integuments, which, when clear of ulcers, were semitransparent—the corneæ were to be distinguished.

Before closing my paper upon the case of this poor, unfortunate woman, I shall take the liberty to offer an observation or two on the medical treatment she received

while under the professional care of the dispensary surgeon. The patient applied at the dispensary soon after the irruption of the complaint, and though she was attended for a period of eight months, yet the disease was suffered to go on to a most ruinous, fatal extent! In individuals infected with syphilis, and who allow it to commit its depredations on the system and constitution, uncontrolled because unresisted, I readily grant the mischief will soon be extensive and serious, and finally terminate, almost with certainty, in the destruction of life; but when an opposite course is pursued,—the incursions of the enemy anticipated and repulsed at the onset,—there is little or nothing unfavourable to be apprehended; the disease becomes disarmed, and the patient is soon after restored to the wonted health and vigour. Poor Lloyd, however, was doomed to contend against the blighting influence of injudicious treatment. I do not state this merely from my own conviction; the same opinion has been pronounced by others of the profession—all I believe who have seen her, and it is entertained by the medical faculty of the Liverpool workhouse.

She is now, apparently, sinking very fast; I saw her last evening on her pallet of straw, weak, wan, and listless—a spectacle—a frightful mass of disease and destruction. I shall not hastily forget the impression which the interview—the last interview—with this wreck of humanity, has left upon my mind.

Liverpool, June 6, 1833.

ON THE CONNEXION OF

RESPIRATION

WITH THE PRINCIPAL PHENOMENA OF

ANIMAL LIFE.

By FERDINAND LAU, *Physician-Accoucheur, London.*

(Concluded from page 339.)

II.

A Pneumatic Theory of Respiration.

THE insufficiency of the doctrines of respiration hitherto offered, and that of the prevailing chemical one in particular, require the attention of physiologists. The conviction that the knowledge of animal life cannot be firmly based without clear views of respiration, has induced the author to direct his attention particularly to this object, and the present essay has been written with a desire of exciting the inquiry of medical philosophers. It must be obvious that many more facts are requisite to give the stability which is necessary to a fundamental theory, and to enable the reader to compare the grounds on which he rejects the one and receives the other doctrine.

If we observe an animal of the higher class with attention, one of the first phenomena that strikes us is, the incessant working of the chest. What may be the cause, what the purpose of this action? It is evidently a mechanical function from which the lungs derive very great importance, for it cannot be interrupted even for a few minutes without endangering life; but that the supposed chemical action may be interrupted for a considerable time, has been already shown in the former part of this paper.

We have, finally, arrived at a very precise knowledge of the mechanism and structure of all the parts concerned in respiration, but it is only lately that this desirable end has been obtained. Soemmering and Reiseisen discovered, at the beginning of the present century, the communication of the trachea with the pulmonary cells, which latter were considered to be the blind terminations of the former. Sir Everard Home and M. Bauer made the important discovery that such was not the case, but that the cells were provided with apertures communicating with the vein and the heart itself.

Some years ago I examined emphysematous lungs. The air-cells were filled partly with a clear fluid, and partly with air. When the cells were pressed, or thrown on the fire, a succession of little explosions followed. On subjecting a small part of the emphysema to the field of the microscope, I observed in some of the transparent and extended cells a membranous formation similar to valves in vessels. The apertures described by Sir E. Home were undoubtedly obliterated by disease, and thus the liquid and the gas were held in confinement. This circumstance, as also the discovery of Sir E. Home, first gave me the idea that the air which enters the cells during their distention by inspiration, is shut up, and cannot return, but enters the said apertures, which, in all probability, are air-ducts, for the purpose of allowing air to enter the blood by atmospheric pressure. To prove such a communication by experiment, I had a rabbit deprived of sensibility by a blow on the head. The head was then removed from the animal, and all the arteries that could be found were tied. The thorax was then opened, and air was blown into the trachea, upon which the heart began to resume its action. I then made a small opening in the aorta, and

found that air proceeded from it; this was collected under water, and acted on the flame of a taper like atmospheric air. Professor Meyer's experiment likewise offers strong proofs in support of such a communication between the air and blood-vessels.

These are the principal facts that led to the views on the function of the lungs, which it is intended here to develop.

Inspiration.

The moment the infant leaves the uterus, the air rushes into the trachea with violence. The lungs, a moment before, two flat compact bodies, lying on the vertebræ of the chest and the ribs, are at once inflated, and fill the whole pectoral cavity. This phenomenon of the first inspiration has formed one of the most puzzling questions in physiology. A variety of opinions has been entertained concerning it, without any of them giving the least satisfactory explanation. We know of no force, either in the lungs themselves, or anywhere else in the system, by which such a distention and inflation could be effected. We can only account for it in the following way:—The rudiments of the osseous portion of the chest are formed in a very early stage of the embryo. In the beginning of the third month, the clavicle, the ribs, and the sternum, are formed. The diaphragm appears very soon after, and closes the chest on the abdominal side. The ribs and sternum grow, particularly in length, by which the cavity is necessarily enlarged. This enlargement of the pectoral space goes on without admitting any fluid or air to fill it up, consequently a great pressure must be exerted by the surrounding fluid. The diaphragm is driven extremely high up into the pectoral cavity. The same pressure is exerted on the epiglottis, which is held down on the rima glottidis, and therefore acts like an hydraulic valve. In this way the chest continues to expand, and the pressure to increase. Immediately after birth the hydraulic pressure is removed from the epiglottis, and by movements of the tongue the epiglottis is raised from the rima. Atmospheric air thus obtaining access, rushes into the trachea, and inflates the lungs so as to fill the whole cavity. The diaphragm was previously very much stretched by the external pressure, but this pressure being now partly removed, it recedes somewhat from the thorax, and becomes more flat. The chest is likewise relieved from the pressure by which it was flattened, and the intercostals may freely contract, and widen the thorax, by which the inflation of the lungs is increased. The spongy mass called the thymus gland, has now considerable pressure thrown upon it, and is gradually obliterated. This violent extension of the lungs ever afterward remains the cause of their tendency to contract, or to collapse, when air is admitted into an opening in the chest.

The epiglottis, accordingly, has an important function to perform in the fœtus. There are three circumstances that tend to confirm this opinion:—

1. Whales have the epiglottis very large, and peculiarly adapted to prevent the water from entering the lungs, which would unavoidably happen if no arrangement were made against it, the mouth of the whale never being entirely closed.

The author had an opportunity of making an observation on the breathing of a large black whale (Balena mysticetus), which deserves attention. This huge animal comes to the surface of the water only for the purpose of expiration. In the year 1831, in returning from Rio de Janeiro, we met with a whale of at least ninety feet in length. The animal accompanied us for an hour, constantly traversing our keel. The water was clear and smooth. Every five or eight minutes he came to the surface, at a distance of 15 or 20 paces, opening his valve-like nostrils as soon as they were above water, and blew out air and vapour. The entire act lasted eight or ten seconds, and was a continued expiration, of which I convinced myself completely. Sometimes when the nostrils were not yet quite above the water, or when a sea rolled over them, water was carried up into the air. The same thing happened frequently at the end of the expiration, the moment the whale was on the point of diving under again. There was no time for inspiration, and the contractions of the nostrils seemed to make it even impossible. When the captain and all the passengers were also completely satisfied that there was no inspiration in whales, they fired three rifle balls at him, which all took effect, as could be clearly seen by the stream that issued from the wounds. The animal did not appear to feel them much, but left the ship, however. The same phenomenon may be observed to occur in porpoises "blowing," as it is called by sailors.

2. Dr. Schrüge of Amsterdam, whose particular office it has been for upwards of forty years to treat persons recently drowned, has made the remarkable discovery, that only those in whom the epiglottis was found to shut the rima glottidis closely, and where, consequently, no water had entered the trachea, would be restored to life again.

3. I was called to a negro child in the

town of Sabarra in Brazil, born in a state of asphyxia. I examined his mouth, found the tongue turned over, and very deep in the fauces. With the intention of removing any foreign matter that might perhaps obstruct the passage of air, I put my finger into the mouth of the infant, and moving the tongue to draw it forth, the air rushed in forcibly, and the child began to cry and to breathe. No mucus or other matter was found.

Atmospheric pressure, it is quite evident, keeps the lungs distended, and by this the contractile fibres of these organs are excited, and expiration is produced. All the voluntary muscles are only aids subservient to respiration. Haller's opinion, that they were the only means by which this function was effected, is quite inadmissible. (See the remarks farther on on the ossified thorax.) The diaphragm seems to act during sleep, but we must recollect that that muscle is in constant conflict with atmospheric pressure, which increases during expiration.

Expiration.

Some physiologists assure us that expiration is performed by the abdominal muscles alone, but to this statement objections occur:—

1. It cannot be supposed that all the mental emotions expressed by the voice, as for instance, a scream or a laugh, should be so many affections of the abdominal muscles. What an unwieldy instrument the windpipe would be if those muscles were the chief performers, and acted through the whole mass of the various abdominal viscera, squeezing those two dead sponges, the lungs, to force the air out of them! How could, in this way, all the modulations of the voice be expressed with such admirable precision as is done by the superior singers? When the larynx is by accident irritated, and a violent cough comes on suddenly, or when a pinch of snuff produces sneezing, are then the abdominal muscles affected also? It would be difficult to trace, and to explain, such a *consensus*. That they assist in breathing is certain, because the lungs cannot move in the least without forcing corresponding movements on them; but they cannot be considered as the chief instruments of expiration, setting aside the action of the lungs themselves.

2. There is an extensive apparatus of muscular fibre, longitudinal and circular, in the trachea, extending even into the structure of the air-cells. This apparatus of contraction cannot be supposed to be quiescent where there is a continual excitement caused by the atmospheric pressure which extends the fibres.

3. In the museum of the College of Surgeons in London, there is a thorax, with all the cartilages completely ossified, and all the articulations of the ribs anchylosed. The chest, in this instance, was perfectly rigid in all its parts; the action of the intercostals and the abdominal muscles on the movements of the thorax, must, consequently, have been annihilated. But surely respiration still continued. In this there is an unequivocal proof that Haller went too far in ascribing the respiratory movements entirely to the voluntary muscles. If the par vagum be divided, respiration becomes laborious instantly, because the muscular fibres of the lungs are paralysed, and death follows in one or two days. If the lungs be paralysed in disease, the labour of the chest becomes immense, and sleep impossible. In such cases the function is dragged on by the voluntary muscles; but that is a different kind of respiration from the respiration which nature carries on in the healthy system by the two principal forms, viz. atmospheric pressure, and the contractile power of the larynx.

All emotions of the mind,—fright, anger, sorrow, joy, &c., have a powerful influence on the organs of respiration, and it is impossible that those organs can be the inert masses which they are represented.

Interesting as is the knowledge of the cause of respiration, no less so is that of its influence on the system.

The recent discoveries of Sir Everard Home and M. Bauer, and the experiments of Professor Meyer (alluded to in the former part of this paper), have established the important fact, that the air-cells are not the blind terminations of the bronchiæ, but that they communicate with smaller cells of the parenchyma of the lungs; and that, from those cells, vessels which lead to the veins and the heart have their origin. This being established, and also the fact that the atmosphere presses with great force on the lungs through the trachea, or, which is the same, into the air-cells and the apertures which are in them, nothing prevents us from taking as a third fact, that air penetrates into all those thousands of minute vessels, and into the veins and left auricle and ventricle. The contraction of the lungs during the act of expiration, and the valves which are most probably in the vessels, (Sir E. Home calls them "lymphatic vessels,") assist materially in the progress of the particles of air towards the heart.

This manner of introducing air into the blood is very different from those rude experiments in which large quantities of air were suddenly driven into the veins, by

which, in many cases, the right ventricle was enlarged, or even rent; and the doctrine of Hippocrates, on which the name of the arteries was founded, is not so vague as has been imagined.

It is inconceivable why the great quantity of air in arterial blood has been so little noticed, and that the purpose it serves there should have been so little understood. Autenrieth tied the carotid artery of a sheep in two places, and cut out the piece within the two ligatures. Some time afterwards he opened the artery, and found a coagulum of one-ninth the volume that it must have occupied in the living animal. This gives us an idea of the rarified state of the arterial blood during life. By the admixture of air the blood becomes highly elastic—a quality of importance, as will appear from the following considerations:—The arteries in the healthy system are completely filled, and powerfully distended, with blood. Suppose now this fluid to be as dense as water; would not a blow on them, or a fall, or any similar accident to which the system is constantly exposed, have the most serious consequences,—for instance, rupture of the tunica interna, producing aneurism? If on any occasion the heart were excited to violent action, would not dense blood occasion a suppression of the cerebral functions, and impede the movements of the brain, which may be as important as the action of the heart? How would it be possible for the heart to continue its contractions, if any considerable impediment to the circulation of the blood existed,—for instance, a general spasm in the capillary vessels? But elastic as the blood is, the heart can continue to act even against very considerable obstacles. By mental affections and disease, the size of the arteries is often suddenly diminished. This could not happen if the blood were not compressible. I shall now endeavour to point out the physical connexion of respiration with the other principal phenomena of the living system.

Connexion of Respiration with the Intellectual Powers.

It has been shown that the lungs are the medium through which air enters the blood. This air, however, cannot be supposed to be intimately mixed with it, but seems to exist in separate particles, of extreme minuteness, involved in the albuminous and gelatinous mass of the blood. I am inclined to think, that the globules of the blood are nothing else than air-bubbles (formed in those extremely narrow mouths of vessels in the lungs, and probably, also, in those of the alimentary canal), which have a coat of coagulable matter formed about them. These must be specifically lighter than pure particles of the blood, and when they come to the arch of the aorta, they will naturally rise to the upper part, and enter those trunks of the arteries which supply the brain and upper extremities, in preference to descending the aorta. The brain, by this arrangement, receives the most airified and elastic blood in the whole system, and, indeed, no organ requires it so much, on account of the danger which is immediately consequent upon a suppression of this cerebral function, and which would happen on all occasions where there was a morbid determination of the blood to the brain, particularly so if the blood were a heavy dense mass. It is a fact, that all the upper parts of the human body are more arterial than the lower, and that the sensibility of the former is more evolved than in the latter, or, in other words, the upper parts have a higher degree of animation.

Allowing the presence of air in the blood, we obtain a knowledge of several points on which we have been hitherto left in utter ignorance. It is a remarkable circumstance, that the upright position in an individual is favourable to the evolutions of the mind. The consideration of air existing in the blood will explain this in some degree. Blood and air are forced together in the lungs, and penetrate each other; but still there remains a tendency to separate—the air striving towards the upper, the heavier blood to the lower, part of the whole mass. Now in the erect position, aided by the construction of the arch of the aorta, the brain is subjected to the influence of the elasticity and pressure of the blood, the effect of which is increased by the pulse, much more than in any other position. Man is, therefore, at the head of the intellectual creation, and among animals we shall generally find ground for this opinion. The abilities of monkies are very well known. The *dipus* (see Lichtenstein's interesting account of these animals) stand upright; their upper extremities are capable of great dexterity, like those of that active and cunning creature the squirrel. A remarkable example of their sagacity is exhibited in the construction of their dens. From the principal cave there runs a passage for some distance, and extends to within an inch or two of the surface, which can easily be broken, thus leaving a safe retreat to the inhabitant in case of an alarm; and it has happened to naturalists in pursuit of these animals, that after digging into the den which they had seen them enter, the place has been found empty. The bat, on the contrary, is perhaps the lowest in the class of mammalia, because bats live dur-

ing the greater part of their existence hanging by their hind claws, with the head downwards. This is the more remarkable, because the *rodentia*, to which order they belong, are distinguished by their extraordinary sagacity. May not, perhaps, the circumstance mentioned be the cause of higher sensibility in the other extreme parts, and account for the sixth sense that is ascribed by some to bats?

But, more strongly than in animals, this theory is evinced in the different stages of evolution in the human body. The fœtus is placed with the head downwards. Consequently the gases have very little influence on the brain, and the nervous functions are therefore lower than in any other of the mammalia. Nature in this manner keeps the animal's powers confined. The fœtus, therefore, endures its uterinal existence longer than other animals, and the organization of the brain receives that higher character which is afterwards necessary for its great intellectual functions. The mind before birth, has its principal seat in the legs; and are not the legs the most sensible and active parts in the fœtus and the new-born infant?

Immediately after birth, the most natural position is the horizontal, which, to the brain, is more advantageous. But a long time ensues before the disadvantages of the former position can be overcome. The child remains helpless and weak in body and mind longer than any other animal. But, gradually, the head is raised uppermost, and this is the position so conducive to the evolution of the mind. The author leaves this interesting subject with reluctance, but hopes that future observations will enable him to resume it.

Connexion of Respiration with the Change of Colour in the Blood during its Passage through the Lungs.

In the lungs the blood is impregnated with air, by which it is rarefied, and with colouring matter also. Whether the oxygen of the air, or the violent concussions with which the air and the albuminous blood are beaten together, or the accompanying evolution of heat in the left ventricle, conduce to the change of colour, it is not here pretended to decide. We have no reason to believe that the colour is of great importance to the functions of the blood. It is only consequent upon other important physical changes, particularly that of density.

Connexion of Respiration with the Action of the Heart.

After what has already been said, the reader will hardly require any assistance to imagine the intimate connexion between these two great functions. The cavity of the chest is originally a vacuum. This vacuum is filled up by atmospheric pressure, which forces the larynx into it. But the lungs have a contractile power, and therefore resist, in a degree, that pressure, and a small space remains still unoccupied. In this is situated the heart. Atmospheric pressure forces air into the bronchiæ and air-cells, and into the minute apertures discovered by Sir E. Home and M. Bauer, and thus the pressure of the atmosphere penetrates into the very cavities of the left side of the heart, and forces that organ into action. The periodic contractions of the lungs assist in the progress of the blood and air to the heart. This, it is presumed, will be found a very intelligible and natural stimulus to the heart, whereas all the imagined chemical, nervous, and other stimuli, are totally unintelligible as to their *modus operandi*.

The calumnæ carnæ and muscull papillares are stretched across the ventricle to prevent the too violent action of the expansive agent within.

The author thinks that the action of the heart has been clearly explained, and its connexion with respiration fully demonstrated. Nothing remains obscure except, in some degree, the nature of the contractile power of the fibres themselves. But by means of physical researches, we have reason to expect that even this wonderful power may be developed.

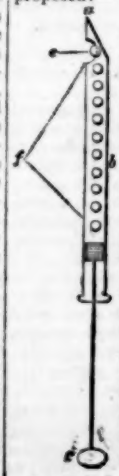
The hearts of lower animals continue to contract for some time, even if there be no expansive agent left in the ventricle. We may account for this in the following way: The compact and elastic substance of the heart, interwoven with the muscular fibre, is, during life, between two forces, viz. the contraction of the muscular fibre and the expansive force of the blood. When the latter is removed, the substance dilates, and thus irritates the fibre with which it is grown together.

The heart seems to have a function of the highest importance, independent of that of bringing about the circulation of the blood. The use of the pulse has never been sufficiently attended to. It seems to have been understood that it is for the circulation. However, a succession of blows, which is evidently the manner in which the heart acts, is not at all an advantageous mode of bringing a fluid into motion. Pressure would be far more applicable. Blows are advantageous only in acting on solid bodies. The pulse seems to be intended to set the solid particles of the system in a vibratory motion; and it appears as if this were the main basis of sensation, which is known to be extinct instantly when the heart suspends its

pulsation. Those creatures that have a powerful heart, stand universally high in the different degrees of animal life. This theory being admitted, we have gained another clear view into the animal economy, viz. that of a very intelligible stimulus of life. Nothing more admirably clever could be imagined to produce a general vibratory motion in the system than the arrangement of the heart, the blood, and the arteries.

The circulation of the blood in the free and rapid current, which it has been generally conceived to possess since the time of Harvey, has recently been very much questioned, particularly by Professor Wildbrand, whose new doctrine on this point of physiology has caused considerable sensation in Germany. He thinks that the arterial current has a perfect termination in the parenchyma, and that on the other side the veins begin from the parenchyma without any such free intermediate communication as is supposed to exist in the capillary vessels. To enter on this subject at any length would be beyond the object of the present essay; but it is not easy to conceive that the whole mass of blood should rush through the heart in three minutes. It may be said that we have seen with our own eyes the current pass over from the arteries into veins, and other reasons may be advanced in support of the theory. But we cannot be sure that the transaction is of a similar nature in all its parts; as, for instance, in the web of a frog's foot. It is the author's opinion, that the freer the intermediate current, the less is the power of nutrition to that particular part. Those membranous structures where the observations have been made, are not intended to be large in volume, because their function would then be destroyed. Nutrition absolutely requires a relative state of rest, and, indeed, animals that have a powerful heart do not become so bulky as where the contrary is the case. The more venous an animal is, and consequently the tardier the circulation of the blood, the larger will be its relative size. Some physiologists teach us that the circulation in the fœtus is as quick again as it is in the adult, because, they say, the pulse is so much quicker. But is a quick pulse a proof of a rapid circulation of the blood, a phenomenon that can only be brought about by great power, knowing as we do by experience that the frequency of the pulse always increases with the weakness of the system. In a dying individual the pulse is often uncountable. A strong, powerful, muscular, person has a slower pulse than a weak and sickly one. In the fœtus, endeavouring to forward as much as possible its bodily growth, and to confine the animal powers—a strongly acting heart would effect the contrary, and call forth powers which are to be kept suppressed. No utility is apparent in a rapid current through the vessels. Thirty-two pounds of blood are said to run through the heart in three minutes. It has been calculated that the left ventricle can hold two ounces; and that this quantity is driven into the aorta at each contraction. But can it be supposed that the ventricle contracts so far as to obliterate entirely this cavity? Can it be supposed that the semilunar valves of the aorta shut closely, and that these thin membranes can resist the pressure of the expansive blood and the contracting arteries? Can these valves hold that confined which the powerful ventricle forces in? All this is perfectly impossible. That the blood by means of these valves receives a determination into the aorta, cannot be denied; but whether the whole mass circulates once in three minutes, or in an hour, or a longer period, is still to be determined. The more a free transition from the arteries into the veins is admitted, the less can we understand the process of nutrition. The theory of Wildbrand isolates that process from the circulation, and thus a greater probability is afforded that that important act of the animal economy will become better known.

Perhaps the time is not very distant at which some convincing experiments will be made on one of the principal trunks of the arteries, to ascertain precisely the velocity of the current. Be the following proposed:—



Prepare a little instrument (fig. *a*, *b*, *c*), a kind of syringe, having a sharp point at *a*, and an opening at *e*, that leads into the tube of the instrument. *f* represents numerous little bodies in the tube, of the same specific gravity as the blood; perhaps mustard seeds may answer. They must be of a size which will enable them to pass *e* with ease. Lay bare an artery of good size, and take particular care that the artery be in an exactly horizontal position during the experiment. Pass a ligature round the part nearest the heart, and put several others at equal distances, so as to have them quite ready for tying. Then thrust the instrument into the artery, just sufficiently deep that no blood

may come in at *e*; drive the piston, *c*, home, and keep it and the whole instrument steady for half a minute. Next tie the lowest ligature without disturbing the horizontal position of the artery; then the upper one, and the others. The examination of the different divisions of the artery will, probably, throw some light on the velocity of the blood in the arteries.

If the theory of Wildbrand be correct, we must seek for explanation respecting the progress of the blood in the veins, not in the left ventricle, but in other circumstances. In fishes we see the blood return to the heart from the extreme parts, without the aid of a ventricle. Nutrition is a chemical act, in which solidification and solution go on constantly. We know by the very interesting experiments of Dr. Faraday, that chemical action will drive substances out of their combination with a force that will overcome the pressure even of forty atmospheres. Chemical action, therefore, may very well account for the ascent of the blood in the veins. The same thing may be applied to the circulation of the blood in the fœtus. I am inclined to think, from my own observation, that when the veins are filled and expanded to a certain extent, they contract slowly, and thus propel the blood towards the heart. The carbonic acid gas, and perhaps other gases formed in the changes that go on in nutrition, seem to make their way chiefly through the lymphatic vessels, in which a liquid is hardly ever found, (Magendie,) and one should indeed think that there must be air-vessels in the animal system analogous to those in plants.

Connexion of Respiration with Animal Heat.

The circumstance that the blood is found 4° or 5° hotter in the left ventricle than anywhere else in the body, has led to the supposition that it acquired that additional temperature in the lungs; but this has not, as far as I am aware, been shown by experiments on the blood of the pulmonary veins, and that it is highly improbable has been shown in the former part of this paper, and will be more clearly demonstrated in the following explanation of animal heat:—The right ventricle forces blood into the veins of the lungs; atmospheric pressure forces air into millions of minute vessels, commencing in the air-cells. This air soon enters the veins. These two substances, the blood and the air, are driven into the left ventricle, and there experience immense pressure, in consequence of which heat is evolved. This explanation is as comprehensible as the former ones. Birds have the highest temperatures, because they have the largest and most powerful hearts. Insects ought, according to their respiration, to have the highest temperature of all animals, but nature has given them no heart. The high temperature of some plants may be very well accounted for, by air being formed and compressed in the vessels. Nutrition and digestion have an indirect connexion with animal heat, but only so far as they produce gases which come into the blood, and are compressed under the action of the ventricles. But to consider either of these as the principal cause is erroneous, because there are animals of amazing nutritive and digestive powers which yet have a low temperature.

Connexion of Respiration with the Stability of Animal Heat.

It is one of the most remarkable circumstances in physiology, that the temperature of the higher animals and man, maintains a great stability even under very considerable changes in the surrounding medium. It must be observed, however, that in animals where the lungs are at a low degree of evolution, the stability of their temperature is much less.

When no satisfactory explanation of this had been discovered, physiologists threw themselves back upon the occult qualities, and in our own time we are told, that the power which in a healthy human individual produces, keeps up, and regulates, animal heat, *produces heat* when only the surrounding medium is under 98° Fahr. But the same power *produces cold* when the surrounding medium is above that temperature. The fœtus, which is about five degrees colder than the mother, has the power of constantly producing cold. But it will be admitted, that there is no explanation of this. The pneumatic theory of respiration accounts in the most simple and satisfactory manner for a phenomenon that has been considered as a puzzle to all philosophers.

Atmospheric pressure sets the left auricle and ventricle to work. If the atmosphere be cold and heavy, its effect on the lungs and heart will be increased; such air contains a greater quantity in a given volume, and exerts great expansive power when heated. It is evident that such an atmosphere excites the heart to great action, supplies it rapidly with air, and great heat must be the result. But, on the contrary, the colder and denser the surrounding atmosphere, the more powerful is its effect in depriving the extreme parts of their heat. In cold weather we feel ourselves very uncomfortable, but this sensation extends only to the extreme parts; the whole mass of the blood keeps its com-

mon temperature, and is, in the central parts, rather hotter than ordinary. In this way the mean temperature of the blood is balanced between the greater production within and the greater loss on the surface of the body. If, on the contrary, the air be heated and rarefied, its effect on the lungs and heart is lessened; the production of heat in the left ventricle will be small, but the temperature will be longer retained. As long as the same air which is in contact with the surface is respired, no sensible change in the mean temperature of the system can take place, because the two opposite conditions, the one within, and the other on the surface, keep equal pace. This explanation of the stability of animal heat seems to be quite satisfactory. It may not appear superfluous to inquire after the purpose nature had in making this arrangement. The whole system is filled with blood. I have subjected this fluid, inclosed in thin intestines, without containing atmospheric air, to water heated to different degrees of temperature. 115° Fahr. caused a dilation to at least double the volume, as when just taken from a living animal. If a dilation of only one-tenth part of the usual volume of the blood were to take place in a living animal, rupture of the heart or other vessel, or apoplexy, at least, would be the certain consequence. Stability of the temperature of the blood is, therefore, an arrangement of the utmost importance to the continuance and safety of the life of the higher animals and man. We cannot withhold our admiration from the wonderful institutions of Nature in effecting her wise purposes, and by means so simple and sure.

The most difficult problem has been solved in the stability of the temperature of the blood, viz. to contrive to exclude one of the most irresistible laws, that of the equilibrium of heat, the effects of which would prove destructive to life in the higher animals and man.

Having now shown within these narrow limits the fallacy of the chemical theory of respiration, and laid down a new theory in its principal points, the author recommends both parts to the examination of those members of the profession who have the cultivation of their science at heart, and who are aware of the defective state in which the groundwork of medicine is still left.

90, Great Portland Street, London,
June, 1833.

OBSERVATIONS ON THE

STRUCTURE OF THE PLACENTA.

By Hugh Ley, *M. D., Physician-Accoucheur to the Middlesex and the Westminster General Lying-in Hospitals.*

The recent death, in the ninth month of gestation, of one of the nurses of the Middlesex Hospital, having afforded me a favourable opportunity of examining the structure of the placenta, and its relation to the uterus, it has been suggested to me, that a detail of the results of my observations and inquiries might be at the present moment not altogether devoid of interest. The subject is one confessedly of great intricacy, and peremptorily demands that combination of "accuracy of observation with fidelity of narration," from the want of which Dr. W. Hunter was wont to allege in his lectures, that "all our great men lie like the devil." It will be my purpose, therefore, in the ensuing paper, to deal rather with facts than impressions —to dwell rather upon what I saw than upon what I may have thought; and I shall, as far as the nature of the inquiry will allow, studiously abstain from cavilling at, or even canvassing, the opinions of others.

This poor woman died almost suddenly, from disease of the heart; and as there had been no symptoms actual or preliminary of labour, the connexion of the placenta with its containing organ was undisturbed even by the contraction of the uterine fibres. The gravid uterus with its contents having been removed, for the purpose of examination, to the hospital, which was contiguous to her residence, the uterine vessels were first effectually cleansed of any blood which they might contain, by the injection into the right spermatic artery of a considerable quantity of warm water. Through the same vessel my friend and former pupil, Mr. Beevor, of Berners-street, then injected double size, coloured with vermilion, until no more would pass without the employment of such force as might endanger the occurrence of laceration and extravasation, which we were most solicitous to prevent. The pipe of the injecting syringe was then introduced into the artery on the left side, which would, however, only admit a small quantity, not exceeding one-eighth of what had passed by the first injection.

The uterus was now cut open, for the purpose of removing the child, for which the friends were waiting, that it might be buried with the corpse of the mother, when in its divided edges could be dis-

tinctly seen large veins traversing the parietes. Though not greatly distended, they were still abundantly conspicuous, and from their canals, even by very moderate pressure, could be squeezed out separate portions of injection.

Upon inspection of the fœtal surface of the placenta, whilst it remained attached to the uterus, it appeared even through the membranes to be uniformly red. The whole mass presented its usual external characters. The flat empty white vessels were ramifying under the membranous expansion, but the entire surface preserved its regularity of form; it was neither more elevated nor more depressed at any one part than when, recently expelled from the uterine cavity by living efforts, it contains only blood. A portion of the membranes of the ovum being peeled off, the appearance underneath very closely resembled that of the surface by which the placenta is attached to the uterus. A distinct layer of decidua, manifestly thicker at the edge than elsewhere, was continued over this aspect of the placenta. It differed in nothing but its thickness from the same membranous substance upon the uterine surface; of this, indeed, it was obviously a continuation, and afforded the most unequivocal evidence of the accuracy of Dr. W. Hunter, and more especially of his editor, Dr. Baillie, who has thus minutely described it:—"The layer of the decidua which lies between the chorion and the placenta, is in one case much thicker than another; it sometimes forms a smooth, tender, opaque membrane, but is more frequently reticulated, especially towards the edges of the placenta, looking somewhat like lace." This reticulated character was rendered beautifully manifest by the distinctness with which the small masses of red injection could be seen through this portion of decidua. The nodules were minutely subdivided, and varied both in their magnitude and their direction. Some appeared not larger than carni, or canary seeds; others were nearly as large as grains of wheat, with a form also regularly defined, and much resembling the latter of these grains, being oblong, with rounded narrow extremities. In their direction they differed somewhat. In general they had no determinate arrangement, but in some instances they seemed to have a linear distribution, conveying the idea to some who saw them that they might be vessels. These small masses were intersected by colourless semi-transparent lines, which defined their form, limited their extent, and conveyed to my mind the impression that they were membranous septa; and whilst they had no remote resemblance to the cut surface of the interior of an orange, they amply verified Dr. Baillie's description of a "*reticulated*" and "*lace-like*" appearance. But though the substance of the placenta was thus minutely injected, its fœtal surface was uniformly smooth and concave; nowhere could be seen large and irregular masses such as extravasation would produce; at no one point, either of its surface or its very edge, to which the injection had equally penetrated, did it appear to be broken down upon the one hand, or elevated and distended upon the other, to the extent of producing the slightest irregularity.

By a force not exceeding, if even equal to, the weight of the placenta, and avoiding all pressure upon its substance, a portion of the edge, equal to about three inches in one direction, by more than an inch in another, was then separated from its attachment to the uterus. This brought into view those small but "very numerous" bloodvessels, described by all who have had opportunities of investigating this subject, and varying in size from mere filaments to the diameter of a crow-quill. These, as the separation proceeded, were seen to be elongated to the extent of nearly half an inch before they were torn by the force employed, and stretching across the angle formed by the already separated surfaces of the placenta and uterus. They generally gave way at their point of attachment to the tender decidua upon the surface of the placenta, and their remaining portions receded, apparently by their own elasticity, to such an extent that it was difficult, and in the majority of instances impossible, afterwards to trace their orifices. It must be obvious, however, that if these vessels were torn, or if they had been cut, as they were in a case recently examined by Mr. Owen, to prevent the effects of violence, such orifices must of necessity exist, though they may be in many instances invisible, from the torn or cut vessels retiring completely within the substance of that irregular layer of spongy and lamellated decidua which remains attached to the uterus.

Through the smoother decidua upon this detached surface of the placenta, as upon the fœtal aspect, could be seen its interior equally and uniformly injected. As, however, here the membrane was thicker and more compact than the decidua immediately beneath the chorion, the precise arrangement of the portions of red injection was less manifest. But in an investigation of this kind, upon which there has been much of controversy, negative facts are by no means unimportant; and it would therefore be improper to

omit the observation, in which all who were present and minutely examined the parts concurred, that there were no large irregular masses or layers of injection between the placenta and the uterus, and not the appearance cognizable to the senses of either laceration or extravasation. The only portions of disentangled injection which came into view, we saw escaping, as pressure was applied to the parietes of the uterus, from those large openings upon the interior of the uterine cavity, known to most of the anatomists of the middle of the last century, and very particularly adverted to by my friend Dr. Robert Lee, in his communication to the Royal Society. These apertures could be distinctly traced by the introduction of a probe, though they were partially, and in many instances almost entirely, covered by that portion of deciduous membrane which, still attached to the surface of the uterus, presented a lamellated character easily separable into layers, and led obliquely to the openings, which, in conformity with the opinion of the Hunters, I am inclined to consider rather as the extremities of the uterine veins than holes in their sides, as would appear to have been the notion of the two professors, "*primus et secundus*," Monro, of Wallace Johnson, and possibly, though far from certainly, of Dr. Robert Lee; or than "cæcal appendices" to the veins, as they were believed to be by Astruc.

Having thus acquired as much information as it appeared probable we should obtain from mere inspection of the placenta, which had been hitherto only injected from the spermatic arteries of the mother, it was determined to inject next the vessels of the umbilical chord, for which purpose I returned to the hospital at the expiration of a few hours. In the interval, however, some one had carelessly or mischievously separated the whole placenta from the uterus, and in doing so had produced a longitudinal fissure upon its uterine surface of about two inches in length. On the most minute examination, however, of this rent, we could detect no large deposit of coloured size near the part, nor upon the corresponding surface of the uterus, nor in the flat vessel which contained them both; nor was there an approach even to evidence, or anything to lead to the suspicion that it was produced by the force of the injection; on the contrary, it was the opinion of all present, some of whom were more conversant with anatomical inquiries than myself, that the laceration was, beyond all doubt or question, the result of rough handling subsequently to the first injection. Nor can I refrain from saying, though I do it with great deference to the opinion of others, that in the case described by Dr. D. Monro there was anything like convincing proof that the injection of the placenta was the result of either laceration or extravasation. That there was a layer of injection between the uterus and the placenta, is unquestionable; but the description of the appearance leads me irresistibly to the conclusion, that the placenta had been filled before this layer was thus deposited, and that it was thrust out of the sinuses by the subsequent injection upon the second day, which was the explanation offered of the fact by his brother, Dr. Alexander Monro.

The uterine surface thus detached from the uterus exhibited its lobules, with their intersecting sulci, even more distinctly than they are seen in the uninjected placenta; and in several parts could be perceived, with the naked eye, small apertures of an oval form, with edges perfectly smooth, regularly defined, and thicker as well as more opaque than the contiguous parts of the decidua which they penetrated. They varied somewhat in their size, and in more than one instance appeared arranged in pairs, at the distance of less than half an inch from each other. They seemed to have membranous continuations of a tubular character, into which a round-headed probe dropped, almost by its own weight, nearly to the opposite or fœtal surface of the placenta. These apertures much resembled others which may always be detected in considerable number passing through that portion of the deciduous membrane which, like the pia mater amongst the convolutions of the brain, dips into the sulci which separate the lobules, and which openings only require the placenta to be placed in the same convex position which it occupies in the uterus, to make them manifest even to the most sceptical.

The pipe of a syringe was now placed in one of the arteries of the chord, and, by very moderate force, a yellow injection was thrown in, until it was seen to return by the umbilical vein, the celerity of the passage of the injection, and consequently its force, being, by the resistance arising from the pressure which the weight of the placenta produced upon the trunks of the fœtal vessels, placed downwards, that we might see the progress and effect of the injection upon the uterine surface. As the vascular part of the placenta became filled, the lobules with their sulci, which always pass obliquely towards the interior, became even more conspicuous than before, in consequence of the moderate and uniform elevation of the centre of each of these natural subdivisions of the

placenta. There was no regular diffusion of the yellow matter under the decidua; but the successive appearance of yellow spots near to the surface at length gave a tint to the whole, the yellow gradually intermingling with the uniform redness previously observed. This tint was more particularly observable towards the centre of each lobule, and at many points near to the surface there manifested itself a most beautiful arborescent appearance, from exceedingly minute vessels, as the injection was passing through their canals. Through the lacerated portion, and there only, the injection escaped in great quantity, oozing largely from the small vessels, and spirting from the larger like blood from an artery divided in the living body during an operation. But since, as I have before taken occasion to state, none of the red injection was hanging about, or had been apparently forced into the rent, so now none of the same injection could be recognised, either forced before, or intermingled with, the yellow fluid as it escaped from the torn vessels, thus affording the strongest collateral evidence that the laceration was not the result of the force of the first injection through the vessels of the uterus. Now also, upon examination of the apertures already described as penetrating the decidua, they, like the lobules and sulci, were even still more distinct than before, and their membranous continuations, somewhat funnel-shaped, passing towards the fœtal aspect of the placenta, became well marked and indisputable. Whatever may be the nature and office of these openings, of which probably the state of our knowledge will not allow us to speak with confidence, at least the apertures themselves were obvious to the unaided senses; and I am happy to have the opportunity of appealing, in corroboration of the accuracy of my description, to Dr. Granville, who is in possession of a portion of the placenta which contained two of the most distinct of them, to my friend and colleague Mr. Arnott, and to Messrs. Corfe, Beevor, and Elwyn, all of whom saw them, and expressed in the strongest terms their opinions that they were natural openings, rather than the results of laceration, to which they bore not the most remote resemblance. My impression with regard to them was, that they were probably connected with the return of blood from the interstitial substance of the placenta, for which office they appeared admirably adapted.

The placenta was now left till the following day, that the cooling and consolidation of the size injection might be perfected, when, upon inspection of the fœtal surface, was seen the beautiful ramification of the trunks of the umbilical vessels before they plunge, in the form of large tubes, into its substance; and it was interesting to observe the exact correspondence which each large trunk, or congeries of large vessels (for occasionally there was more than one), bore to the lobule or natural subdivision of the placenta opposite to its entrance, which was always nearly in the centre of each giobule. This arrangement of vessels very closely resembles that which we find in the human kidney, in which organ each branch of the renal artery, which divides before its perfect entrance, is distributed upon a lobule or natural subdivision which constitutes a distinct secerning organ. This arrangement of vessels also strongly favours the notion, evidently gaining ground both in this country and upon the continent, of the close analogy betwixt the cotyledons of the brute creation and the lobules of the human placenta. This peculiar distribution is beautifully shown in a successfully macerated placenta which Dr. Granville did me the favour to show me, and in which each of these main trunks is seen to ramify towards its summit with extraordinary minuteness, so as to be gathered into as many distinct bundles as it may be fairly inferred there must have been lobules, and looking, when the membranes which they pierced were rendered convex by allowing them to hang over the hand, like so many gooseberry or currant bushes in a garden, or (as Dr. Granville expressed himself) like so many stunted oaks in an old forest. The intervening membranous surface was perfectly bald, and, occupying a very considerable space, led to the irresistible inference that whilst the bloodvessels remained, a large quantity of interstitial substance, equal nearly, if not quite, to half of what was required to make up the bulk of the placenta, had been removed by maceration, as well as both surfaces of the decidua.

Having cut through the substance of the placenta from its fœtal to its uterine surface, and in a direction parallel to the course of its large vessels before they enter, the two injections appeared much intermingled, though the red predominated towards the uterine, the yellow towards the fœtal aspect. This is in exact conformity with what Dr. Wm. Hunter had observed, who referred it to the displacement of the first by the second injection. Both being rendered fluid, from the whole mass being surrounded with warm water, to favour the passage of the substance injected, the gradual filling of the vessels of the funis pushed the injection previously intro-

duced towards the opposite or uterine aspect, exercising, in short, an influence analogous to that by which it was believed by John Hunter, that the blood which had done its office in the cellular part of the placenta, was returned into the venous orifices upon the interior of the uterus; the turgidity of the placenta assisting "to squeeze the blood into the mouths of the veins of the uterus, that it may again pass into the common circulation of the mother."* Still, however, the red injection evidently and largely preponderated in the textures immediately connected with the decidua upon both surfaces of the placenta. These, even now, appear almost uniformly red, the decidua having indisputably received its injection from the uterine vessels, from which all agree that, at least for the purpose of nourishment, this membrane receives its supply of blood.

Of the interior structure little could be made out without the aid of glasses of magnifying power. With lenses of moderate power I then examined small detached portions of the placenta, my attention being first directed to the red injection. This appeared to be minutely subdivided into small masses or nodules, which, although the whole cut edge was rendered slightly convex by pressure upon the two surfaces, still retained the position which they occupied, notwithstanding the compression to which the whole portion was subjected whilst held with the fingers, or with forceps, that a strong light might be directed upon it. Nor can I here refrain from noticing the striking contrast between the effects of compression respectively upon the uterine sinuses and the interior of the placenta. The pressure from the fingers and thumb, in simply holding up the parietes of the uterus, squeezed out the injection from its sinuses, the apertures upon the interior surface of the uterus offering no resistance; whilst the same injection, compressed to an equal degree in the interior of the placenta, was still detained, notwithstanding the incision which had been carried quite through the organ which contained it, and into which it has been alleged to have been merely extravasated. The difference forces conviction upon my mind, that, in the latter case, a cellular apparatus entangled the injection. The small masses or nodules which I have described were also seen and distinctly recognised by Messrs. Beevor, Corfe, and Elwyn, who were present at this examination, and the illustration used by all to convey an idea of what we saw, proved that the appearance which presented itself to each of us was similar, or identical. So one described it as like the corpora cavernosa penis, without being aware that this was the illustration repeatedly used by the Hunters in explanation of the mode of circulation; another considered it to resemble the minutest cavities in the cellular tissue of the lungs, injected with red injection; whilst to myself, the textures in the human body which it instantly suggested were the hyaloid tunic in the eye, and the peculiar membranes which entangle fat and marrow in their interstices. All, therefore, in their illustrations and expressions, avowed their impressions of the existence of a cellular tissue, and consequently agreed in the belief that the red injection was therein deposited, and that this tissue, formed of a most delicate pellucid membrane, must have so entangled the injection as to prevent its escape upon the application of pressure. All, too, saw circulating upon and amongst these granules the minute ramifications of those bloodvessels which had been filled with the yellow injection. I have since repeatedly, and often in the presence of others, examined, through a microscope of considerable power, different portions of this placenta; and each succeeding examination tends but to corroborate the accuracy of my first observations. The minute subdivisions of the red injection into granules, or nodules, is most conspicuous, and they are evidently entangled in and about a membranous substance, which strong spirit has, with the decidua upon the surfaces, rendered less transparent and of a pearly lustre, whilst close to, and often upon, these minute masses, may be equally distinctly traced the slender lines of yellow injection contained in the ultimate ramifications of the vessels of the chord.

The examination of recent placentæ, immediately after their expulsion from the uterus, affords also very strong corroborative evidence of the existence of this cellular tissue. For this purpose it is requisite to select a placenta which has been subject to very little pressure in its expulsion and extraction. The vagina, then, must have been capacious and relaxed; a single and slight uterine effort must have sufficed for its expulsion from the cavity of the uterus, and only the smallest assistance by traction of the navel-string have been required to invert the placenta, and thus preserve its internal surface from violence in its course. Without attention to these points, the placenta will be nearly drained, and its internal texture appear to

* Observations on certain Parts of the Animal Economy, p. 133.

be made up almost entirely of white strings (the bloodvessels). It will contain very little blood, the greater part having been squeezed out by the reiterated contractions of the uterus, the pressure of the vagina, or the rough handling of the practitioner. Not so, however, under the more favourable circumstances I have enumerated: such a placenta, washed by the most gentle shaking in tepid water, into which it should be at once put, without even allowing it to rest upon any solid body, and before the blood has time to coagulate, will present upon its surface a dark purplish colour, and if gently torn by bending the fœtal surface back upon itself, avoiding all pressure upon the part which gives way, the lacerated surfaces look like a torn mass of currant jelly, confined in some texture which allows but little to escape, and that little drop by drop, like the vitreous humour from its hyaloid membrane, or the transparent gelatinous fluid from a similar membrane in a large navel-string; or, if further illustration be required, like lymph from a vaccine pustule. The vessels are not immediately visible; but if, with a little water dropped gently from the hand upon the rent, the blood be then washed, the whitish vessels stretching across the rent, most of them being entire come into view, and resemble exactly those which are at once visible upon tearing in a similar way a placenta which has been the subject of more compression. This experiment I have again and again repeated, and always with the same result. In both placentæ, however (as well that which is drained of its blood as that which is still full), the circumstances connected with the vascular part were similar; the vessels of the navel-string had been tied upon the birth of the child in both. In one, however, blood remained entangled in some texture so as to hide the vessels; in the other the bloodvessels came immediately into view. In the former the placenta had sustained little or no pressure—in the latter the compression was considerable; in the former the blood remained—in the latter it was gone. No one can well doubt that the pressure had caused the blood to escape in the latter case. But it may be asked, whence did the blood escape? Not from the vessels, because these were tied, and they do not penetrate the deciduous membrane so as to allow the escape in that direction. It must, then, have been from the interstitial texture exterior to the coats of the vessels which the experiments and observations of the Hunters prove to have a direct communication with the maternal, but not with the fœtal vessels, and which, there cannot be a shadow of doubt, also held the red injection in the placenta which I have described. To me, too, it appears almost equally manifest that this peculiar substance has more or less of a cellular character, and that the blood which, in the recent placenta, it was seen to contain, inasmuch as that blood was exterior to the coats of the vessels, and not within these canals, must of necessity have come from the mother.

I am well aware—for it were folly to affect ignorance upon such a subject—that this view of the structure of the placenta has been of late much controverted. It has been said, upon authority for which I entertain, and would wish therefore to show, respect, that "the placenta consists SOLELY of a congeries of the umbilical vessels covered on the fœtal surface by the chorion and amnion, and on the uterine surface by the deciduous membrane.*" But this description is incomplete and inaccurate; it omits altogether that layer of decidua which I have shown, upon the authority of others, as well as by my own observation, to exist between the chorion and the fœtal surface of the placenta, and excludes even those white filaments which run in various directions, and connect together the ramifications of the umbilical arteries subdivided to an almost indefinite extent; the existence of which is admitted in the same paper.† These, indeed, appear to me virtually to concede the existence of an interstitial substance of a cellular tissue; for if "the ramifications of the umbilical arteries" (*and veins?*) subdivided to an almost indefinite extent, "are connected together by white slender filaments, running in various directions," it is clear that these filaments must be at the least as numerous as the vessels which they connect—that they must interlace each other in every conceivable direction, and must have spaces between them; which spaces are neither more nor less than the cells of the Hunters, or "the cellular texture" seen by Dr. Nimmo, in the Glasgow preparations, full of injection; which, however, he believes to have entered at some weak point of the second layer of decidua upon the placenta, by a laceration which, however, he seems to have been unable to detect. Nor is this interstitial substance very differently described by William Hunter, who represents it as consisting of "a thousand irregular processes, which pervade the substance of the placenta, as deep as the chorion or

* Dr. R. Lee, in Philosophical Transactions, 1832, p. 60.
† Phil. Trans., 1815, p. 59, 60.

inner surface, and are everywhere so blended and entangled with the ramifications of the umbilical system, that no anatomist will, perhaps, be able to discover the nature of their union.* Indeed the only distinction in the description of each is, that Dr. R. Lee represents them merely as *connecting filaments*, without tracing them to their source, or hinting at their distribution and its consequences, whilst Dr. Wm. Hunter, with that minuteness which characterizes him, declares them to be productions of the decidua, "shooting out into innumerable floating processes and rugæ, with the most *irregular* and most minutely subdivided cavities between them that can be conceived." Dr. R. Lee, then, errs only by omission, but, as far as he goes, rather corroborates than controverts, the accuracy of Dr. William Hunter; which appears, moreover, to be further established, if that were requisite, by the experiments which I have had frequent opportunities of making upon the recent, and also by repeated microscopic observations upon the injected, placenta. In the smallest fragment even of the latter, these processes, constituting no small portion of the mass examined, were still detected. Whether the incision was carried vertically, horizontally, or obliquely, in the direction of or across the vessels, the membrane, semitransparent, and pearly, from the spirit, was still abundantly conspicuous, and probably identical with the white filaments admitted by Dr. R. Lee; with "the thousand irregular processes," and "the innumerable processes and rugæ, with the most irregular and most minutely subdivided cavities between them," of Dr. Wm. Hunter. These processes, however, though distinct in every part, were even more obvious, because greater and more numerous, in the direction of the edges and of the sulci; which latter may be justly considered as the edges of so many "placentulæ," and have always a very oblique direction, much corresponding with those portions of decidua which are still attached to the uterus, which present a lamellated appearance, and which lead towards those openings of the uterus which enter obliquely into the veins or sinuses.

It thus appears that the placenta is made up, not only of the ramifications of the vessels which proceed from the umbilical chord into its substance, but of two layers also of deciduous membrane—the one upon the uterine, the other upon the fœtal surface; that, connected with these layers, and proceeding from them, minute processes are continued through every part of its substance; that these processes, shooting in every direction, and therefore decussating each other, must of necessity leave cavities or spaces between them; that these spaces may be filled by injection thrown into the spermatic arteries of the mother, without the slightest evidence of laceration or extravasation; and that, in the recent placenta, these spaces are full of fluid blood, which is exterior to the coats of the vessels, and therefore must come from the mother.

These are facts within my own knowledge, because established by my own personal experiments and observations; and they seem not unimportant as contributing to the settlement of a question which has been recently agitated with the keenness and acrimony of personal controversy.

I may not, perhaps, have added largely, if at all, to our previous stock of knowledge upon these subjects; the facts which I have recorded, have at least a claim to authenticity. In some points they differ slightly from the descriptions of the Hunters; but even these differences tend rather to supply omissions than to correct inaccuracies. In the main points they afford very unequivocal evidence of the anxiety of those great physiologists, whose character has become a species of public property, to be minute in their researches, and accurate in their statements and conclusions; and although they must be acknowledged to be somewhat at variance with the opinions of some of my contemporaries, I am fain to acknowledge that hitherto I have seen and heard nothing which is calculated to convict those great luminaries in physiology, of error or misconception, in the doctrines which they have advanced, upon the intricate subject of the structure and office of the placenta.—*Now first* PUBLISHED.

* Wm. Hunter on the Gravid Uterus.

FRACTURE OF THE PATELLA.—"A gentleman came to me the other day from the country," observed Mr. Brodie, "with a fractured patella, and which, from mismanagement, had been drawn about an inch and a half above the knee. There was I suppose union by ligament. Indeed I believe union by ligament always takes place in these cases, whether the fractured ends of bones be separated far apart from each other or not. In the one case the ligament is thinner, and more stretched out; whilst in the other it is of a thicker, stronger, and firmer consistence. I do not believe that this ligament ever ossifies. I believe that where pieces of bone have been found in it, it has been from the patella being broken into many pieces."—*Mr. Brodie at St. George's Hospital.*

THE LANCET.

London, Saturday, June 15, 1833.

If society in England were in a natural condition, the science of medicine might be neglected without producing, possibly, many deleterious consequences to the community; but inasmuch as nature has been forgotten in nearly all our modes of living, and in almost the whole of our civil and political arrangements, the science which is applied to the removal of those diseases which are consequent on the adoption of artificial pursuits of every denomination, must be deemed one of paramount importance. Therapeutically considered, medicine is of immense advantage to us corporeally; and physiologically considered, this branch of knowledge, including as it does the study of the phenomena of the mind, is one of overwhelming interest and utility, by adding to and strengthening the whole of the perceptive and intellectual faculties.

As nothing could be more Utopian than to expect that we should speedily return to an observance of those habits which are dictated by the principles of common sense, it becomes matter of prudence to provide against evils which but too often have no other foundation for their existence, than our own folly and ignorance. The study of medicine, therefore, under present circumstances, is, undoubtedly, one of utility more than one of pleasure, though no science is richer in supplying materials for intellectual enjoyment.

Many have been the occasions on which we have illustrated the propriety, and even the necessity, of adopting a comprehensive system of legislation, in relation to this strikingly-important subject. Having founded our remarks not less on the errors of past legislators than on the actual wants of society, the arguments we have employed have carried with them the irresistible influence of truth. But instead of stimulating to action those individuals who ought to have been moved by the development of so much error and evil doing, the exposures made from time to time in this Journal, appeared to appal the very men who alone possess the power of removing the abuses under which the members of the profession literally groaned. We allude, of course, to the gentlemen who constituted the Tory Ministry under the premiership of the Earl of Liverpool. Sir Robert Peel, as the then Secretary of State for the Home Department, invariably inclined his prejudiced ear to the deceitful accents of the monopolists, apparently rejecting with disdain every petition for relief that was forwarded to his office by the great body of the members of the College. On one occasion this right honourable baronet, who has recently set up his pretensions to liberalism, pettishly protested "that he could never "consent to any reform in the College of "Surgeons, which could recognise the "principle of allowing the commonalty to "vote for the election of the members of "the Council,"—thus denouncing, at the very threshold of inquiry, the only certain remedy for the tyrannous proceedings of the privileged rulers of that institution. At this time we are more fortunate. The present Home Secretary, Lord Melbourne, not only refers to the anomalies of the Acts of Parliament which relate to the government of medical practitioners, but sanctions the introduction of a bill by his brother, the Hon. G. Lamb, into the House of Commons, avowedly for the purpose of destroying the odious monopoly which was conferred on the Company of Apothecaries by the pernicious Act of 1815. Thus the Apothecaries Amendment Bill may be regarded as a Government measure, and, sooner or later, will inevitably be enacted into a law. It is proposed as a *measure of relief* against

certain restrictions imposed by the Act of 1815, but it is not, we rejoice to say, deemed worthy of being a final measure. If it were thus estimated by the Government, it would be a misfortune, as the blows of this legislative instrument are directed only against some of the great branches of the tree of corruption, the trunk and roots being unassailed. Essentially, the new bill is designed to relieve the members of universities and colleges from the odious restraints imposed on their professional pursuits by the prosecutions and persecutions of the company of retail drug dealers of the City of London. As such, with a very slight emendation, it will be entitled to the support of the entire profession.

In order, however, to arrive at just conclusions with regard to the alterations that are required — nay, are absolutely necessary—it is important that we should clearly understand what are our grievances, and what are the measures now proposed for our relief.

What, then, are the grievances?

1st. Fellows of all the Universities, of all the Medical Colleges of England, Ireland, and Scotland, are disqualified from practising as *Apothecaries* in England and Wales, under a penalty of 20*l.* for every offence.

2nd. Fellows, members, and licentiates, of all the Colleges of Surgeons in England, Ireland, and Scotland, are equally disqualified from practising as *Apothecaries* by the same statute.

But it may be asked, "In what consists the practice of an apothecary?" Why, the judges concur in deciding, according to the Act of 1815, that an apothecary is an individual who *attends* a person afflicted with some *internal* disease, or, requiring external or manual aid, *prescribes* for the cure of such complaint, and *supplies the medicine.*

Now mark! A physician is liable to no penalty for attending and prescribing; a surgeon is liable to no penalty for attending and prescribing. A druggist, even, is liable to no penalty for prescribing and supplying medicine. Yet the physician who is deemed qualified to prescribe in the most fearful of ailments, and the surgeon whom the law allows to prescribe in the most dangerous of complaints, are both held to be irresponsible to the law, unless they commit the heinous offence of *supplying* the medicines, which they have the avowed, the acknowledged ability to order. Thus all our physicians and surgeons subject themselves to the penalties of the Apothecaries Act by discharging only one of two mechanical subordinate functions which may be exercised with legal impunity by the ordinary retailer of drugs. Nothing, surely, was ever more preposterous. The gross, the monstrous anomaly, is too astounding to admit of a parallel. In short, we hardly know in what manner to present this case, so as to furnish our legislators with even a remote semblance of its scandalous and unsightly deformities.

Let us, however, for one moment, put aside the physician, and introduce a tailor to the notice of our senators.

A shapeless, nondescript being, consisting of mere skin and bones, presenting prominences where there should be cavities, and hollows where there should be projections, sends to an artist, and earnestly entreats to be made up into something resembling a human being. The skilful mechanic prompts his ingenuity, and, by dint of study and contrivance, manufactures a covering suitable to the peculiar wants of his customer. The law permits the full exercise of his skill in this respect. He may invent the useful and ornamental covering, he may even go so far as to "prepare" it, without being subjected to penalty, or becoming the subject of murmur. But, if the unhappy wight

send the required habiliments to his customer, he then, and not until then, incurs a penalty of 20*l.* for every offence.

Now, if this were actually the state of the law, in relation to the appropriation and selling of woollen cloth, would not every man of common sense laugh at the folly and imbecility of the fabricators of a statute under which such a penalty could be inflicted?

Thus, then, to avoid the penalty, the skilful artist would be compelled to consign the strictly mechanical part of his labours to some other individual, and, after all, the disagreeable impression, the careless workmanship, might defeat the object of his anxious meditations.

Such then are the most characteristic and striking of our grievances, and how is it proposed to remove them? By enacting, of course, that all legally-qualified physicians and surgeons shall be empowered to execute, if they think proper, the mechanical duties of an apothecary, by preparing whatever medicines they may prescribe for the sick. Unhappily, the Bill before us contains no such provisions, the relief being extended to those practitioners only who may desire to settle in Scotland.

That such a limitation to the operation and consequent utility of the measure has been accidental, is not problematical. Were it otherwise, and should it become law, it would reduce the practitioners of medicine to poverty and even beggary, whilst, at the same time, those of England and Ireland would be fettered to the same degree of degradation and misery as at present.

If the members of the colleges of Edinburgh and Dublin are to be emancipated from the odious shackles of the Act of 1815, on what principle of justice, on what plea of necessity, on what ground of propriety, are the members of the London and Dublin Colleges of Surgeons, and of the Colleges of Physicians of those cities, to be denied similar advantages and freedom? Is the public to be told that the gentlemen belonging to those colleges have not the ability to mix their medicines in a mortar, and send them to their patients by an errand boy?

On what pretext, we should like to know, can this Act be made to apply to Scotland, while it excludes England and Ireland from its meditated operation. But we are certain that the omission is the result of an oversight,—that it is not intended to keep down physicians and surgeons under the *surveillance* of a disreputable company of retail dispensers of medicines,—not disreputable because they are "retail dealers," but because they have played the part of petty monopolists. Is it possible, in short, that a measure avowedly projected for the relief of medical practitioners should limit that relief to one portion of the empire, and at the same time tighten the manacles of the practitioners resident in the other two portions, stigmatize them as incompetent to discharge the duties allotted to chemists and druggists, and visit them with additional insult and injury? The thing is utterly impossible. We are confident that no such injustice to the Fellows of the Colleges of Physicians, and the Members of the Colleges of Surgeons, of London or Dublin, was or is intended; and we firmly believe, that it is merely necessary to point out the defect in order to obtain its removal, and that in a manner the most liberal and satisfactory.

One word more. The hired agents of the Worshipful Company of Blackfriars Bridge contend, that the allowing physicians and surgeons to dispense the medicines prescribed by themselves, would amount to a complete destruction of the Act of 1815. This is the assertion of knaves, and is put forth at the critical moment for the basest of purposes. The

Act of 1815, as stated in the preamble, and in the fifth section, was passed to protect the public from the horrors resulting from the mal-practices of ignorant pretenders to medicine. Is the Licentiate of the College of Physicians an ignorant pretender? Are the Members of the London and Dublin Colleges of Surgeons ignorant pretenders? No, no. The Apothecaries Act would not be destroyed by this Bill. On the contrary, its power over *unlicensed* practitioners would remain in full force. The privilege of persecuting the Fellows and Members of the Medical Colleges, would alone be abrogated. The law, as it now stands, confers on a monopolising drug company, the prerogative, the unjust prerogative, of persecuting and insulting the members of the most respectable of our universities and colleges, and what is still worse, of effectually depriving the public of the benefit which should be derived from the cultivation and practice of the science of medicine. The supporters of the Bill now before the House of Commons, profess to have devised a scheme for our deliverance from these insupportable pains and penalties, and we can only say, that if the measure be alike emancipatory to the graduates of Scotch Universities, and to the Members of the chartered Colleges of Physicians and Surgeons, the Legislature will be as successful in its labours, as we feel confident it is beneficent in its intentions.

A LIST of 104 questions, occupying several sheets of paper, was lately forwarded to each of the medical gentlemen of Nottingham, with a "desire" that replies to them should be sent forthwith to the lately-appointed Central Board of Factory Commissioners. Proper remuneration for compliance with this order has been demanded by, at least, one gentleman. The result shall be laid before our readers next week.

SUPPOSED EXISTENCE OF ARSENIC IN GLASS TEST-TUBES.

AT the meeting of the *Académie de Médecine* on the 21st ult., M. Pelletier read a report on the memoir of M. Ozanam, physician of the great hospital of Lyons, relative to the absence or presence of arsenic in the white glass tubes, which are employed in chemical laboratories. M. Ozanam was, with another physician in Lyons, directed to examine the body of an individual who had been several years dead, when the presence of arsenic was ascertained. The second physician afterwards retracted the decision, and attributed the presence of arsenic to the mixture of this substance with the glass tubes employed in the analysis. M. Ozanam consequently drew up several questions, which the minister addressed to the Academy. The questions were:—

1st. Is arsenic generally employed in the manufacture of white glass in France?

2nd. In what state does it exist in the glass? Is it combined with its potash, silica, and soda?

3rd. Can re-agents decompose it and reduce it to its original state?

4th. When these tubes are powerfully heated, can the arsenic be disengaged?

From the experiments performed by the commission, M. Pelletier concludes,

1st. That the white glass in France does not generally contain arsenic; that it may do so rarely, and then in exceedingly minute quantity.

2nd. That the glass tubes containing 0.600 or even 0.500 of arsenic, afford no trace of it by heating or by reagents.

3rd. That no arsenic was found in the glass tubes stated by M. Ozanam to have been obtained from Bohemia.

4th. That the commission could not obtain any Bohemian window glass.

5th. That the arsenic sometimes employed in the glass manufacture, is volatalized by the heat of the furnace, and the glass contains none.

6th. When arsenic was found in glass, it had not been made at a sufficiently high temperature. As to the action of reagents, it showed nothing when the glass was white and perfectly transparent, for then, in fact, they contain no arsenic at all.

M. Pelletier, on the demand of the commission, also undertook additional experiments. He endeavoured to make arsenical glass by increasing the proportion of

arseniate of soda. On fusing this glass, mere imponderable traces of arsenic were obtained. Thus,

1st. It is difficult to obtain arsenical glass.

2nd. Such glass is not perfectly transparent.

3rd. Even then the traces of arsenic detected are not sufficient to account for the least accident.

4th. An error of this kind is impossible in an analysis in a suspected case of poisoning, when suitable precautions are employed, because transparent glass contains no arsenic, and cannot, consequently, lead to any false conclusions.

M. Pelletier, as every one knows, is a very able chemist, and the experiments in question, which are of great importance, fully sustain his high reputation; but his knowledge of legal indications can be only very trifling when he supposes that a certain and dangerous quantity of arsenic must be detected in order to prove an accusation. The only questions the *chemist* has to determine, relate to the presence of arsenic and the various causes which may lead to that presence; for example, whether it might not, like copper or iron, be an atomic constituent of animal tissues, or whether it might not have pre-existed in the tests or apparatus employed in the analysis. With the *effects* of the arsenic the *chemist* has nothing to do. Neither is he at all concerned in the appreciation of the intent of its administration. His business is to perform a rigorous analysis, and he ought to possess practical knowledge of every particle of the chemical history of the metal. Thus only can he guard against fallacies himself, and detect errors when committed by other experimentalists.

A Memoir on the Advantages and Practicability of dividing the Stricture in Strangulated Hernia on the outside of the Sac. With Cases and Drawings. By C. Aston Key, Senior-Surgeon to Guy's Hospital, and Lecturer on Surgery. London. Longman. 1833. 8vo. pp. 161.

On the *practicability* of the above mode of operating, there cannot be two opinions. Every surgeon must vote in the affirmative of the question. But with regard to its *advantages*, we entertain views of a very different character, notwithstanding the facts and arguments advanced in the "Memoir" before us. Mr. Key treats the subject simply with reference to the greater or less extent of wound made in the operation, and the greater or less degree of exposure of the intestines. The pathology or morbid condition of the parts he has, if not entirely overlooked, at least greatly underrated.

We shall confine our remarks on the work to the portions entitled—"Danger attending the Operation for Strangulated Hernia," and "Advantages of the Operation under consideration." Speaking of "the fatality that often attends the usual mode of operating for strangulated hernia," Mr. Key says—

"Oftentimes must the surgeon have deplored the necessity of having recourse to an operation that, under some circumstances, holds out so slender a chance of success, and not unfrequently has his duty compelled him to perform it with the condition that, while it afforded the only hope of relieving the intestine from impending gangrene, it would almost certainly lead to the destruction of the patient."

Here is a stumbling-block in the very first page. We deny the position. There is *already* gangrene. Impending *death* is the foe from whom the patient has to be relieved. The patient is advised to undergo an operation which may lead to the saving of his life, and not one which "may almost certainly lead" to his destruction. Mr. Key has attempted to prove too much, and has attributed to the operation a danger which is inseparable from the morbid condition of the parts for which it is undertaken. The chief assignable reason for which Mr. Key attempts to revive the operation for dividing the stricture on the outside of the sac, is the great danger of the usual operation of opening the hernial bag. We shall, therefore, proceed at once to examine this position.

The operation for a rupture is undertaken, because the protruded parts are girt by a stricture which has excited pain and great disturbance, and has totally arrested the intestinal function. The tendency of such a girth around the protrusion, is to produce an injury which is greater in proportion to the tightness of

the stricture, and the time during which these vitally important parts have been subjected to its influence. Injury to the coats of the intestine at the part where the stricture presses, inflammation extending to the abdomen, ulcerations, effusions of serum and pus, depositions of coagulable lymph agglutinating parts unnaturally together, and, lastly, gangrene, are among the effects which follow the stricture.

Mr. Key says (page 2), that as to the dangers attending the operation for strangulated hernia, the records of large hospitals and the memoranda of private practice, if candidly stated, will afford abundant proof. A little further on he admits that "where the operation is performed "early, before untoward symptoms have "supervened, it is usually attended with a "fair prospect of success;" and at page 4, he observes, that "if the surgeon's "practice be confined to private patients, "and he is fortunate enough, and, it may "be added, wise enough, to operate before "inflammatory symptoms show themselves, he will save the *majority* of his "cases." Here the *danger* of the operation is reduced altogether to the danger of *delaying* the operation; and if we take the danger of the operation for strangulated hernia, exclusively and singly, which the author's example would justify us in doing, we should require none but his own statements to prove that there is but a very moderate portion of danger depending on the operation, and that there is very great danger in *hesitating to perform it at the very earliest period at which its necessity is manifested*. This is a position which the late Mr. Hey of Leeds, and many surgeons after him, have strongly enforced. We have no desire, however, to profit by this mistake of the author, but will discuss, not what he describes, "the "danger attending the operation for "strangulated hernia," but what he means "by the danger attending the operation for "hernia, *after it has been long strangulated*." He evidently intends, that when inflammatory symptoms have arisen, and certain morbid actions have been going on, there is more danger in the *operation, exclusively*, than where no such morbid changes have taken place. This is the point on which we are at issue. His chief arguments are deduced from the great fatality of such cases. But what does such fatality prove? Simply this, that when parts are thrown into the morbid conditions above enumerated by the pressure of a stricture, the removal of that stricture is not sufficient to remove the diseased effects, and that the morbid actions excited in important vital parts, will go on after the exciting cause is removed. This is in accordance with every-day pathology, and, therefore, to adduce such proofs of the danger of the operation for strangulated hernia, is not sound reasoning.

At page 5 the author says,

"Unfortunately, a surgeon, who, from experience, is awareof the great risk to which the operation exposes his patient, is compelled either to shrink from his duty, and trust to the effect of remedies which past experience has proved unavailing, or to perform an operation which, under existing circumstances, instead of giving relief, will only tend to aggravate the inflammation."

This is written without reflection. The man who would shrink from his duty, or trust to *unavailing remedies*, should not be called a "surgeon," and he who really thinks that the *tendency* of the operation is to aggravate the inflammation, should never be trusted with a case of hernia. But so anxious is Mr. Key to excite attention to this long-abandoned operation, that he has gulped his conclusions without reflecting on their digestibility. A bowel suffering from tight constriction, its circulation stopped, its peristaltic action reversed, and its passage impervious,—that an operation which sets such a bowel free, and restores it to its original state, should tend to aggravate the inflammation, is a strange conclusion. That an injury is inflicted by an operation we admit, but it is a minor injury, inflicted upon subjacent and less vital parts, to remove a direct cause of destruction from parts intimately connected with life itself. That the inflammation may go on in spite of the operation we very well know, but the commission of an indirect injury which tends to remove so direct and powerful a cause of disease, is not to be regarded in the light

of an aggravation of the existing danger. At page 7 the author says—

"I am by no means desirous of representing a wound of a healthy serous membrane as an injury of a highly dangerous nature, and as universally followed by wide-spreading inflammation. Wounds of the abdominal cavity and of the pleura, that have come under my observation, have frequently healed by adhesion, without the presence of an alarming symptom; and, as the ingenious author* of the Observations on Abdominal Surgery has shown, incisions into the peritoneum may be made without that immediate risk of inflammation which was formerly supposed to attend such wounds. The Cæsarean operation, the operation of removing ovarian cysts and the uterus, accidental wounds of the abdomen followed by protrusion of the intestines, and even the severer forms of abdominal injury in which the spleen has been removed, have all occasionally been unattended by alarming signs of inflammation."

This is a complicated enumeration of severe injuries to the abdominal cavity, compared with which the operation of opening a hernial sac is a very trifle, and quite sufficient to divest us of any fears as to the *exclusive danger* of the operation for strangulated hernia.

Mr. Key subjoins brief descriptions of thirteen fatal cases of hernia that have occurred in Guy's Hospital within the last few years, and of which the author says—

"The majority of the cases appeared to have died from peritoneal inflammation consequent upon the exposure of an inflamed or strangulated portion of bowel."

How could the author assume that the inflammation was *consequent* upon the operation? It is quite evident that in every case it *preceded* the operation. Case 1 died on the seventh day from the attack, "without mentioning the existence of a hernia." No operation was performed, and therefore the inflammation could not be *consequent on the exposure, &c.* Case 2 is as follows:—

"A female was brought in with symptoms of strangulation of several days' duration, and so depressed as to lead to the suspicion that gangrene, if it had not already taken place, was about to supervene. The sac and the intestine were therefore opened, and the intestine allowed to remain in the sac after the division of the stricture. She died before the end of the second day. The intestine was of a dark dusky olive colour, but free from adhesions; the intestine above the stricture highly vascular, and dilated. Effusion of plastic lymph was found on the peritoneal surface of the intestines."

Our readers will judge whether the dangerous nature of the stricture, or the dangerous nature of the operation for its removal, was most concerned in the death of this patient. In case 3, the report states that the hernia was "so tender "from the patient's own attempt to reduce "it, that further employment of the taxis "was deemed inexpedient." It further states, that "the convolution that was "formed in the sac, was thickened, and "not returned by the operator, who "thought that it was ulcerated internally. "Inflammation came on, and he sank in "two days." It should rather have been said that inflammation *went on*, for it is evident that inflammation existed prior to the operation. Case 4 was an old femoral hernia, with an *adhesive omentum*, which in our opinion had more to do with the continuance of the inflammation than the operation. In Case 5 the report states, that "the stricture being freely divided, "several long-continued and fruitless at-"tempts were made to replace the bowel. "*An opening was made into it* to relieve the "distention, and the operator was com-"pelled to leave that portion in the sac, "* * * and it appeared, on a post-"mortem examination, to be in a *gangre-"nous condition*." Was the state of parts in this case consequent upon the exposure of the bowel, or the result of previous stricture? Case 6 was a hernia of forty-four years' standing, ten times attacked with strangulation, and was reduced with the taxis, leaving a piece of *irreducible omentum* in the sac. The bowels were relieved. Peritonitis came on on the third day, and he died on the fifth. If the operation had been performed in this case, instead of employing the taxis, the inflammation and death of the patient would have been "consequent upon the exposure of the bowel." Cases 7 to 13 are all adverse to the position, that the operation

* "Researches, Phy. and Path. By James Blundell, M.D. 1824."

in certain protracted cases "would almost "certainly *lead* to the destruction of the "patient." It is quite plain, upon a perusal of these cases, that the operation did not "lead," but was rather dragged, into the track of the destruction that was going on.

The most objectionable point in this work is, not that the operation which Mr. Key advocates is inadmissible in all cases, but that the fatal cases he has cited,—the majority of which, he says, appeared to die from peritoneal inflammation consequent upon the exposure of an inflamed or strangulated portion of bowel (by which he infers, that a different result would have followed had his operation been performed),—are precisely the kind of cases for which no surgeon who thoroughly understands the morbid conditions to which herniæ are subject, and who fully comprehends the morbid influences which it occasions, would think of performing that operation. On a recent hernial protrusion, recently strangulated, the operation advised by Mr. Key might often advantageously be substituted for a dangerous and long-continued perseverance with the taxis. Continued pressure upon a tense and painful intestine, cannot fail to produce mischievous effects, and must give to any subsequent operation a much smaller chance of success. In recent hernial protrusions (recently strangulated), the operation is, without doubt, preferable to that of opening the sac; but in irreducible herniæ, or whenever there may be any complication, as of adherent omentum, or where the operation has been long delayed, this operation should never be depended on. Sharp, Heister, Le Dran, and Richter, are all against this mode of operating. Richter, in his "Traité des Hernies," says of it, "This method possesses "no utility, no advantage that renders it "preferable to the ordinary method. It is "founded only on the *imaginary* danger of "opening the hernial sac." He adds, that this mode of operating is not to be re- "jected in all cases; but, on the contrary, "may sometimes be practised with utility "and advantage in certain specified cases." He plainly declares, and so do we, that this operation is not commonly admissible, and that unless great care is taken in discriminating the cases to which it is applied, there is great mischief to be apprehended from its adoption.

Mr. Key has overlooked the important fact, that there are conditions of old herniæ which require other relief than the division of the stricture. He is either not aware, or does not believe, that symptoms of strangulation can exist without any stricture whatever upon a hernial protrusion. He has in one place alluded to the work of Mr. Stephens, which we lately introduced to the notice of the profession, but his reference is made in a manner which induces us to say that he cannot have read it. The senior surgeon of Guy's says, "I cannot but think that Mr. Ste- "phens has attributed more to the effects "of slight recent agglutination of the "bowels, than experience will be found "to justify, and that he has regarded that "as a cause of the mischief which ought "rather to be ascribed to the effect of in- "flammation."

This subject is worthy a few additional remarks, and as we hold a strong faith in the views of Mr. Stephens, we shall seize the opportunity of reverting again to them. As Mr. Key has derived but little advantage from skimming the work of the general practitioner, we will refer him to that of Sir Astley Cooper, in page 42, Part I, in whose admirable work on hernia—edited by Mr. Aston Key himself—he will find the case of a patient (a fatal case) in whom the symptoms continued after the operation, and, consequently, after the division of the stricture. Upon dissection, a portion of ileum was found, which had not been returned, in consequence of its *adhesion to the sac*. In page 43, also of the same work, Cooper says, "It sometimes "happens that the convolution of intes- "tine in the hernial sac, has its sides glued "together by *recent adhesion*. When this "happens, *it is right to separate them before "the intestine is returned*, because the stools "do not readily find their way through an "intestine which is thus doubled." In a case produced by Mr. Stephens, which we did not quote in our late review of that gentleman's work, an operation had been performed by Mr. Tyrrell, and the report

states, "that the patient *was not in the least* "*relieved by the operation*;" and in the post-mortem examination it was found that the portion of ileum which had been strangulated was "doubled upon itself at an acute angle, and fixed by adhesions." The above examples alone go very far to prove that Mr. Stephens has *not* attributed more to the effects of "recent agglutination of the bowel than experience will justify." By-the-by, it is not to recent adhesions of the bowel that his work calls attention, but to *old* adhesions, and to the tendency which those adhesions have to confine the intestines and obstruct the passage of their contents. Mr. S. writes—

"The intestines, when confined by adhesions, carry on with difficulty their peristaltic movements, but so long as they have only fluid contents to propel forwards, or contain nothing which requires for its passage a more distended state of intestine, their function is carried on; but when any substance is eaten which is bulky, or which requires a larger space for its passage than the intestines so confined by adhesions will allow, or which requires a more vigorous action of them, they are unable to carry on their office, and obstruction and inflammation follow, and pain and uneasiness in the abdomen, after taking food, are among the premonitory symptoms which indicate, at some period or other, the occurrence of permanent obstruction.

At page 58, part 1st, of Sir A. Cooper's work, is a case related by Mr. Key, in which it is said of the hernia, that

"It was a curious circumstance, that when pressed upon, a gurgling noise was heard, and the contents of the intestine readily returned; and as soon as the finger was taken off, the tumour became as large as ever." In reporting the operation the writer says, "The prevention of the return of the intestine was also clearly demonstrated, for when it was raised, the lower part was firmly adhering to the inner side of the sac, which did not seem very recent, so that notwithstanding the man was so positive of having always been able to return it, I have little doubt but that it had existed some weeks irreducible." The report farther says, "No stricture whatever seemed to exist, for when the intestine was emptied, two fingers could be very readily passed through the internal ring into the abdomen, and the adhesions having been cut through, the intestine was readily returned."

The symptoms which are said to denote a strangulated hernia, can exist without any strangulation, or even without any stricture whatever. The difficulty of diagnosis in hernia has arisen, as Mr. Stephens has very justly observed, "from "the habit which surgeons have fallen "into of looking to one cause only, viz. "stricture, for an explanation of the "different phenomena which this disease "presents, instead of considering the dif-"ferent morbid conditions as the result "of different causes."

"The want of success (Mr. Stephens elsewhere observes) attending operations upon large herniæ, particularly umbilical, is attributed to the direct exposure of the peritoneal cavity, by which a dangerous inflammation is excited. I believe that the inflammation which destroys the patient is, in the majority of cases, altogether established before any operation is attempted."

This is quite in accordance with our own conviction, expressed upon the cases related in the "Memoir" before us. The appendices of the intestines, such as the omentum, the epiploicæ, the hernial sac, &c., often become thickened, inflamed, and suppurating, and are a frequent source of inflammation to the contiguous bowels or peritoneum. These facts supply us with the strongest possible objections to an operation without opening the hernial sac in irreducible hernia.

Before finally turning our backs on the target which the senior surgeon of Guy's has thus set up, but which we have now sufficiently riddled to render it perfectly transparent, we have one shot more to fire, and that will be in the bull's eye. Does Mr. Key remember the celebrated "no-hernia case?" In that instance the patient had symptoms which Mr. Key thought denoted a strangulated bowel. He accordingly performed an "operation," but was amazed to find that a gland had formed the tumour, underneath which was an empty hernial sac, containing some pus. The pus being by this accident discharged, the patient was saved. Had the operator imagined that no bowel was protruded, he would not, with his instinctive dread of opening hernial sacs, have performed any operation, and the patient would, in all probability, have died, instead of being

thus undesignedly relieved and saved. Mr. Key must henceforth rank with those modest gentlemen who occasionally

"Do good by stealth,
And blush to find it fame."

In our notice of this volume—which, in justice to book-buyers, we may observe, is famously "spaced," and does not contain (barring the three drawings) so much matter as would come into a single LANCET,—we have confined our remarks chiefly to the pathological conditions of hernia, which form, we think, insuperable obstacles to anything like a general adoption of the resuscitated operation. To its practicability we assent, and as to the best mode of performing it, why Mr. Key has had "time" enough and "career" enough at Guy's Hospital to make him a tolerable judge of that; and so saying, we close the volume.

SIR WILLIAM BLIZARD.

To the Editor of THE LANCET.

SIR,—It has long been a matter of grief with those who see the surgical practice of the London Hospital, to witness the sad effects constantly produced by the continuance of Sir W. Blizard in his office of surgeon to that institution. He labours under the infirmities of extreme age, and is consequently rendered totally unfit for the situation. For his time of life he possesses his faculties in an extraordinary degree, but he does not retain that perfection and delicacy of discrimination which are indispensable to the welfare of his patients. Evidences of this are constantly occurring at the hospital. Numbers are discharged long before the period of convalescence, and others suffer lamentably from the causes to which I allude. I will name one or two of these which are at present in the hospital under his care. The first is a case of simple fracture of the tibia and fibula, which occurred about four weeks back. In Sir William's examining it last week, he fancied that union had taken place, although assured to the contrary by Mr. Luke, who was present. Adhering, however, to his own opinion, Sir William ordered the man to get up every day, and bear *firmly* on his foot, the effect of which has been the separation of the union which was gradually taking place, the bones now overlapping each other so as to produce a distortion, which will most probably be permanent. In a case of compound fracture of the same bones, although the accident occurred eleven weeks ago, there is not the slightest attempt at union, as the bones are not in apposition, and being continually subjected to the rough handling of the old gentleman every time he makes his rounds, the patient's constitution is reduced to the lowest ebb, from the irritation induced. In a case of hydrocele now in the house, in a man seventy-five years of age, Sir William ordered the removal of the testicle, with which direction, however, Mr. Luke persisted in refusing to comply. Numerous other cases could I mention, but I think these are sufficient to point out the necessity of giving attention to an evil which is revolting to every feeling of humanity. Under these circumstances, Sir, I take the liberty of troubling you with this communication, conceiving that it may, in the pages of THE LANCET, meet the observation of those gentlemen who can at once remedy the evil. It is said that the committee of the hospital, although partially aware of the imbecility of the knight, are unwilling to request his resignation, from a feeling that he has laboured so many years for the benefit of the institution, that it would be ungenerous and illiberal to discard him in his old age. Such a reason, however, ought not for a moment to stand in opposition to the welfare, and even the lives, of the patients. However, these scruples might be overcome by appointing Sir William "Consulting Surgeon." I am, Sir, yours,

A PUPIL OF THE HOSPITAL.

May 20th, 1833.

WESTMINSTER HOSPITAL.

THE CABAL—MEDICAL MANŒUVRING.

THE Board-room of this Institution has recently been the scene of virulent contests between the several parties who aspire to regulate its affairs. As far as the real interests of the charity are concerned, it matters little perhaps which is triumphant, but the agitation that such exhibitions excite amongst the governors and subscribers, is likely to do good, by rousing them from the lethargic indifference into which they have fallen, with respect to the hospital concerns.

The resignation of the office of apothecary, by Mr. D. O. EDWARDS, first gave rise to these animosities. Three gentlemen, who have recently become busybodies at the Boards, and who, from always acting in concert, have been nick-

named THE CABAL, put forward a candidate for the vacant situation, regardless of his professional qualifications, of which indeed, being unprofessional men, they were utterly incompetent to judge. The trio were very active in plying circulars recommending their medical protegé, who was opposed by Mr. EDWARDS MURRAY, the superiority of whose professional acquirements was unequivocally acknowledged. Mr. MURRAY, however, had *one* fault which more than counterbalanced, *in the eyes of the medical interests*, all his merit, and that was his being the cousin and pupil of the late apothecary. That gentleman was not of sufficiently supple back to please the disinterested physicians, and a successor of the same school would have been worse than wormwood. Consequently, and notwithstanding the unequivocal index of the examination, their strength was added to that of the CABAL, and Mr. MURRAY was left to the influence of his talents solely. The result was as follows:—

Mr. BULLOCK	51
Mr. MURRAY	50
Majority for the CABAL	1

The trio, *Doctor* HALLETT, *Doctor* WOOD, and *Nurse* FREEMAN, so titled from their services in the medical department, were elated beyond measure by their success, and a vacancy immediately occurring in the post of *secretary*, they strained every nerve to supply the vacancy with a creature of their own. On this occasion the *medical officers*, to their credit be it spoken, supported Mr. G. F. KNOX, whose gratuitous services as cupper to the Institution for several years, as well as his admitted fitness for the duties, were considered to form strong claims. The trio soon saw he was not the tool for them, and put in practice every device to frustrate his election. Being members of the committee of that immaculate patriot Sir JOHN HOBHOUSE, of which committee *Dr.* HALLETT was chairman, and *Nurse* FREEMAN secretary, they exerted their utmost powers to influence the trustees, and by the opportunities thus afforded them, they spread uncontradicted the most pernicious misrepresentations. Again the "Cabal" was victorious, and Mr. KNOX, with his medical supporters, was left in the lurch. At the close of the *ballot*, the poll stood thus:—

Mr. WILSON	73
Mr. G. F. KNOX	69
Majority for the CABAL	4

The CABAL had now the game in their own hands, and carried all their views into effect.

It is but justice to state, however, that some of their measures were wholesome, especially those which imposed a more strict observance of duty on the part of the physicians and surgeons. In consequence of the negligent attendance of these medical gentlemen, repeated complaints proceeded from the patients, and dissatisfaction was excited amongst the trustees. The list of pupils also became exceedingly reduced, the greater number taking flight to St. George's Hospital.

Notwithstanding the general desertion of the pupils, the physicians were determined to complete the disgust of those which remained, by making a job of the CLINICAL ASSISTANTSHIP. It will be recollected that this appointment was made by the Board about six years since, as an encouragement to the industrious pupils. Free board and apartments in the house for six months were given to the pupil who should pass the best examination, and this examination was entrusted to the physicians. How worthy they were of this trust, will appear from the sequel.

Although the regulation states that the candidates are to be selected from amongst the *pupils* of the hospital, the physicians have not scrupled on various occasions to admit pupils from other hospitals, and even graduates of several years' standing, in competition with the *bond-fide* students contemplated by the governors. They have also of their own authority, in several instances, excluded the surgical pupils, and the injured parties having hitherto been young men without friends among the trustees, were compelled to submit. The physicians, made bold by impunity, at last played their game with too reckless a hand, and involved in the meshes of their injustice the nephew of one of the powerful *cabal*. A full investigation took place, and an exposure was the consequence. Two pupils diligently prepared themselves for the examination. Mr. BASHAM, nephew of *Dr.* Hallett, physician's pupil; and Mr. J. FOOTE, surgeons' pupil. In competition with these appeared a Dr. BARR, a gentleman of twelve years' standing in the profession, and who formerly had been an active trustee and committeeman. This excited the indignation of the whole body of pupils, but then he was the friend of Dr. ROE, and that was enough to cover a multitude of sins. This physician *was himself one of the examiners*. The first act of the impartial judges was to exclude Mr. FOOTE from the list of candidates, on the ground of his being a surgeon's pupil only, an exclusion, as we have stated, unauthorized by the regulation. The senior physician publicly said, he expected this gentleman would eclipse the

other competitors! The examination was public, and it is the opinion of the by-standers that that of Mr. BASHAM was the best, although he is a pupil of not more than three years standing; but the "esprit du corps" was in favour of the *Doctor*, who, by a *physical necessity*, must know more than the under-graduate. The weekly board twice decided that Dr. BARR was not eligible, but a mutual "compromise" was effected amongst the high contending parties; thus the interests of the pupils and the plain meaning of the regulation were forgotten. The friends of Dr. BARR and the friends of Mr. BASHAM having made up their quarrel, public principle was wisely thrown to the dogs. In the arrangement, however, "standing orders" and "regulations" are broken through; but that is a trifle, for the interests of *individuals* have been consulted. If such proceedings are permitted, it would be wise in governors to look after their money, and in medical students to *demur* before they enter as pupils to this hospital. The delinquency against the standing orders, on the good faith of which former benefactors have bequeathed their legacies, was perpetrated by a private committee, proposed by *Nurse* FREEMAN. There is yet a remedy in a SPECIAL GENERAL BOARD. Notwithstanding the unambiguous opinion of the governors generally, as to the *equity* of the affair, and the uselessness of the situation as far as the good of the charity is concerned, Dr. BARR has had the courage to come forward, and thus add another drain to the nearly-exhausted funds of the hospital.

ST. BARTHOLOMEW'S HOSPITAL.

LITHOTRIPSY.

GREAT interest has lately been excited at this Hospital, by the performance of the operation above-mentioned, by Baron Heurteloup.

His first patient, Robert Winkfield, æt. 62, a shoemaker, stout and healthy in appearance, had been troubled for some time with all the symptoms of stone in the bladder. Previous to the operation, the patient was placed on a bed, constructed for the purpose, and secured by means of a broad leather belt passed over his shoulders: on the introduction of a sound the stone was discovered, which was about the size of an almond, and consisted of lithic acid. The percussor was then passed into the bladder, after it had been distended with warm water, and the operator seized the calculus. The instrument was next fixed by a screw to an upright bar of steel, firmly attached to the bed, and the stone was broken by a few strokes of the hammer on the end of the percussor. The bladder was afterwards injected with warm water, and several fragments were immediately passed. This operation was repeated, with like success, on two following occasions, at intervals of a week, after which no fragments could be discovered in the bladder, and the man went out of the hospital perfectly restored, and from accounts lately received, he has experienced no kind of ill consequence, but continues to enjoy good health.

The other two patients, operated on by the Baron, are still in the hospital; the first was a young man, a tinman, named Thomas Reese, æt. 20, of a weak constitution, and sallow complexion. The stone was seized and crushed with great dexterity, since which several pieces have come away.

On Saturday, 8th, he was again brought into the Theatre, but the passage of the catheter was interrupted by some fragments of stone in the urethra,—these were removed by means of a pair of slender forceps. They proved to be two flat irregular and angular fragments, the greatest diameter of one being about half an inch. In consequence of the irritation, caused by their extraction, further operation was postponed.

The other patient, Thomas Woodbridge, a saddler, and a strong hale-looking man, was discovered, on sounding, to have several large calculi; he was admitted into Darker's Ward, May 1st, and on Saturday the 25th, he was operated on; it was found necessary, a fortnight before this period, to enlarge the orifice of the canal by means of a knife, in order to admit the instrument; some slight irritation having come on subsequent to the destruction of the calculus, fifteen leeches were applied to the scrotum, and on the 28th this was repeated. The patient expressed himself greatly relieved by the operation, which he bore with but a trifling degree of suffering, and which, in his own words, "was not *pain*, but a state of great uneasiness, and a desire to make water."

On Saturday, June 8, the Baron exhibited several fragments which this last-named patient had voided with his urine, some of them of large size. He then secured and broke down some large pieces in the bladder, and also an entire stone. The operator directed the attention of the pupils to the quantity of matter which would be passed by the patient.

Another patient was also sounded who had presented himself at the hospital, labouring under symptoms of urinary calculus—bloody urine and pain in voiding

it—which Mr. Earle considered to originate from diseased kidneys. The Baron stated that there was no stone in the bladder, but that there existed in it a coating of a deposit of the white phosphate, which he recommended to be treated with acid injections.

June 11. Thomas Reese and Thomas Woodbridge appear to be doing well, the latter has brought away a large quantity of pulverised calculus, with several fragments. He states that all the straining which he experienced on making water, before the operation, and which was so distressing, has entirely disappeared, but that on stooping forwards he is made conscious of the presence of calculi by the pricking sensation which he then feels.

ERYSIPELAS OF THE HAND AND ARM AFTER AMPUTATION OF THE FINGER.

A. Shaw, æt. 45, a man of a strumous appearance, was admitted into Rahere's Ward, May 9, under the care of Mr. Lawrence. He stated that, about five months since, he was attacked with rheumatic fever, and that on its subsidence he experienced a great deal of pain in his right-hand, but especially in the joints of the fore-finger, which became swelled and subsequently terminated in open ulcers, communicating with the cavities of the articulations. In this state he applied for relief at this hospital. He complained of great pain in the diseased part, extending up the fore-arm and arm to the shoulder; insomuch that it prevented him from sleeping at night; his pulse and tongue indicated great constitutional irritation, and to use the man's expression, "it made him feel ill all over." ℞ *Pil. saponis c. opio*, grs. v, omni nocte s. *Ess. sarsæ*, ʒss, bis indies adhibend. *Mist. sennæ comp.*, pro re natâ.

23. As no relief had been derived from the above-mentioned treatment, Mr. Lawrence thought it advisable to amputate the finger, before further mischief was done to the constitution; this was performed in the usual manner, above the inferior extremity of the metacarpal bone.

24. The patient complained to-day of great pain in the wound, the edges of which were red and tumid, as was also the hand; these appearances extended themselves to the forearm and shoulder of the affected side; petechiæ were also observed on the lower extremities, which were preceded by a sense of smarting and itching; the pulse was full, hard, and quickened; the tongue white, and no food could be kept on the stomach. Is ordered —*Venesectio* ad ʒxvj. *Mist. salinæ*, ʒiss; *liq. antim. tart.*, ʒi; 6tis horis s.

25. Says he was very much relieved by the bleeding, but the whole limb seems swollen, stiff, and has an erysipelatous blush, the pain being still severe, and preventing him from taking any rest at night; his lower extremities frequently become cold, and the petechiæ are more apparent. The febrile symptoms having become urgent the venesection was repeated. *Haust. efferves.*, ter die. *Hyd. submur., pulv. antim.*, aa. grs. ij, 6tis. horis. *Cataplas. lini*, part. affect.

29. Has experienced great comfort from the poulticing, the wound has assumed a more healthy appearance, and the limb is paler and less tumid. *Pil. colocynth, c. calomel*, h. s. s.

31. Circulation has become more equal, and all the unfavourable symptoms have greatly diminished. In consequence, however, of some debility of which the patient complains, he is ordered *sulph. quiniæ*, grs. ij, *c. infus. rosæ*, 8 horis s.

June 2. He has gradually improved; the swelling of the arm has almost entirely subsided, and the pain and redness have nearly disappeared; some vesications have taken place on the neck; the petechiæ, although still evident, are much paler; and he sleeps better at night. Being troubled with a slight diarrhœa, it was obviated by giving him *Mist. cretæ*, ʒiss; *tinct. opii*, gr. vj; *conf. arom.* grs. x, 4ta quaque hora.

3. Complains chiefly of weakness; is ordered a mutton-chop.

5. The petechiæ are still very thick about the ancles. *Vin. rub.* ʒiv, quotidie.

7. The wine is increased to eleven ounces; the man expresses himself to be very much better.

11. Is improved in every respect, excepting that the petechiæ remain, and appear in some instances to have extended themselves.

NEW ALA NASI.—William Hopkins, the poor fellow mentioned at page 477, last volume, as having undergone several operations for the "formation of a new ala nasi, and part of the upper lip," was once more led into the operating theatre on June 1st, when Mr. Earle dissected out a flap of integument from the side of the cheek, sufficient to cover the large cicatrix which extended from the side of the nose and mouth to near the inner canthus of the left eye. The surface of this having been pared away, the whole was secured in its place by means of sutures and strapping.—11th. The wound seems to have healed by the first intention, and from the favourable appearances of the case, Mr. Earle's efforts at length promise to be crowned by success.

MIDDLESEX HOSPITAL.

SINGULAR CASE OF HYDROCELE.

Isaac Cann, ætat. 38, a coachman, plethoric and robust, entered the hospital on the 27th of April, under the following circumstances: He had been engaged the day before in cleaning a carriage in the yard, and on the completion of his work, attempted to push it into the house. This required great exertion, and after two or three minutes unsuccessful labour, he felt as if something had fallen suddenly from the abdomen into the scrotum. On examination, he found the latter much distended with fluid. He experienced but very little pain at the moment or since, and came into the hospital more in compliance with the wishes of his friends than to be relieved from suffering. The appearance of the scrotum at his entrance was that of a soft tumour, completely filling every part of the cellular membrane, enveloping the testicles. The skin was of the natural colour, somewhat rough on its surface, felt like dough, and retained the impression of the finger for some minutes. The spermatic process was larger than natural, but seemed perfectly free. The tumour was quite cold, the penis of the usual size and colour, and not affected in the slightest degree. His general health was good, but he remarked that he had not made water so frequently since the accident as before. The medical attendant said, it was evident from the man's account that the fluid had been secreted in the abdomen, and was forced downwards by the act of exertion, and he spoke of the case as one of the most singular he had ever witnessed from such a cause.

℞ *Compound colocynth pill* gr. xij;
Rhubarb powder grs. viii; make into four pills, two to be taken at bedtime.

℞ *Muriate of ammonia* 1 oz;
Vinegar 4 ozs;
Spirit of wine 3 ozs. Let flannel cloths be dipped in this mixture, and applied to the part every two hours. Let the part be supported by a truss.

April 28th. The tumour appeared somewhat larger to-day; the skin smooth; its form elongated; it was heavier and firmer. On placing a candle behind it, the scrotum did not present the transparent appearance usually observed in cases of this description. The testicle was not so plainly felt as yesterday, but the spermatic cord was obvious when handled. The two pills had produced no evacuation from the bowels.

℞ *Epsom salts*, 1 oz.;
Infusion of rose water 6 ozs.; a tablespoonful to be taken every two hours until the stomach is acted on. Continue the pills at bedtime. Let the fomentation to the parts be kept up every two hours.

29th. The parts unaltered. A consultation was held between three surgeons, and a determination formed to draw off the water, which was deferred until the next day in consequence of his complaining of debility. Continue the remedies already prescribed.

30th. Feels much better, the bowels having been moved. The tumour was now tapped, with a trocar and canula, at its inferior part, a little towards the left side, and about nine ounces of water were drawn off. The scrotum was then injected with a mixture of three parts of wine and one of water, which after being retained for twenty minutes, was allowed to escape. Considerable difficulty was felt in voiding the whole, as the canula slipped out of its place in consequence of the restlessness of the patient, and some fears were entertained that the mixture would ooze into the cellular membrane. This, however, was prevented. After the operation, the puncture was closed with two slips of adhesive plaster, and the bag truss ordered to be continued to the scrotum.

May 1. To-day the patient complained of great pain during the night in the scrotum, extending along the course of the spermatic chord. On examination it was found that the parts were red and swollen, and had put on other inflammatory appearances at the lower part. Low diet.

℞ *Epsom salts* 2 ozs;
Infusion of rose water 6 ozs;
Tincture of squills 2 drachms; a tablespoonful every four hours.

This treatment was persevered in for six days, at the termination of which he departed (contrary to the advice of his medical attendants) because he was not allowed a diet of animal food.

Leeds.—A very interesting election struggle has just terminated at Leeds in consequence of the retirement of Mr. Chorley from the office of surgeon to the Leeds Infirmary. Three candidates started. The appointment was obtained by Mr. T. P. Teale.

BRISTOL INFIRMARY.

LIGATURE OF THE EXTERNAL ILIAC.

(From a Correspondent.)

The surgeons act at this institution upon the most liberal principles towards their brethren, and it is by no means an unusual matter to have thirty or forty visitors to any operation out of the common track. Upon the present occasion, there were hardly less than from eighty to ninety persons. The operation room is spacious, light, and well ventilated. The gallery is carried three parts round, there is plenty of accommodation, and the discipline is excellent. None but the officers of the house and the pupils of the operating surgeon are ever permitted to occupy the area of the floor, so that there is no bustle, no calling out of "heads." In fact the spectators can witness what is going on in a comfortable and satisfactory manner.

The Bristol Infirmary is a well-appointed and well-regulated establishment. It possesses a good library, a fine museum, and able professional officers, and must afford to students an admirable field for obtaining medical and surgical knowledge.

Residing in the neighbourhood of Bristol, and learning lately that there was a case of inguinal aneurism in the above institution, I requested permission to see the operation. It was granted immediately. We waited somewhat impatiently about an hour, when Mr. Richard Smith, the senior surgeon, came into the room and said, "Gentlemen, I am sorry to inform you that I cannot persuade the man to submit to the operation, although he had distinctly consented to it; but if I can hereafter alter his resolution, I shall be happy to see you all again." We departed, much disappointed. A week elapsed, and on the 21st we again assembled. In a few minutes the patient was brought in, seemingly care-worn and woe-begone. He was aged about 40, and dated his malady to a kick from a rioter, when the prison was burned in October, 1831, he being a turnkey.

The perforation in the artery was, probably, nearly about under the centre of Poupart's ligament, extending in a circle up the abdomen and down the thigh, about two inches and a half each way. It pulsated very strongly over the whole surface, and every stroke was visible in the gallery.

This unfavourable extension of the disease had rapidly increased during the week which had elapsed. It obliged Mr. Smith to begin his incision higher than is usual. The operator drew his scalpel at one sweep entirely through the integuments in a somewhat semilunar direction, making a wound about five inches long, and ending at the upper edge of the tumour. The external oblique was thus completely exposed. The fascia was next lightly cut through, and a director was passed down, upon which the muscle was slit to correspond with the external opening of the integuments. The operator now passed his left index from across, and entirely under, both the internal oblique and the transversalis, ran the back of a Pott's knife along his finger, divided the whole, and thus exposed a considerable surface of the white peritoneum. Laying aside his knife, the way was cleared with both hands down to the psoas muscle, and the operator began to search the cavity. One of the surgeons who was near, asked "Do you feel the artery?" "Yes, distinctly, and it is a good deal bound down, but I think I shall soon be able to detach it with my finger and thumb." Presently Mr. Smith said, "Now I have the artery over my finger." "Is it quite free?" "Yes, there is nothing but the artery; I am quite sure of it; favour me with the blunt needle with the ligature." The instrument broke from the handle, another was substituted, and the needle was passed very readily under the vessel. A surgeon pulled up the ligature with a dissecting forceps, and the needle was then withdrawn. The silk was now under the artery. The operator drew up the ends so as to bring the sides of the artery in contact. "Gentlemen, will you satisfy yourselves that the circulation is commanded?" Three or four hands in succession were laid upon the tumour. "Yes, the pulsation is gone—it is all right—the sooner you tie the better." The ligature was then tightened, and the operation finished. The integuments were drawn together with adhesive plaster, a strip of lint and bandage were applied, and the patient was carried out. The operation occupied under ten minutes, and there was not a tablespoonful of blood spilled from first to last. After the first incision, the patient appeared scarcely to suffer at all. The operation gave universal satisfaction. It was performed with the utmost coolness, and in a surgeon-like manner. I have seen Sir Astley Cooper perform the operation twice, and I have seen three other hospital surgeons perform it in London, but this operation in my judgment might dispute the palm with any of them. The utmost attention also was evinced by the other four surgeons, Messrs. Hetling, Lowe, Daniel, and N. Smith, and the duties of Mr. Morgan,

the house-surgeon, were performed with promptness.

Five days have now elapsed, and I understand that the man has had not one unpleasant symptom; he has slept well; there has been no tension of the abdomen, the wound exhibits a mere line, the tumour sinks, and the limb is of a comfortable temperature. This case is the second of the kind which has occurred in the house.

Mr. Smith has been surgeon to the institution for nearly forty years.

May 26th, 1833.

ANTI-HEMORRHAGIC EFFECTS OF THE ERGOT OF RYE ON THE MALE.

To the Editor of THE LANCET.

SIR,—I perceive in No. 502 of THE LANCET, an article headed as above. In corroboration of the statement there put forward, I beg to inform you, that I have employed that medicine with the same view for the last two years, with invariable success, my treatment being only somewhat more active than Dr. Lanyon's, viz., ten grains every second hour, in ordinary cases; but where the hemorrhage was very alarming, every hour for six or eight hours consecutively.

It is but just to state, that my adoption of this practice arose from reading an article on the same subject published in a Number of your truly invaluable journal, somewhen in the year 1831.

I am, Sir, your most obedient,

HENRY AUGUSTUS O'SHEA.
Surgeon, Aghada Dispensary, Cloyne.

May 4th, 1833.

ERGOT OF RYE.—Patient æt. 60.—Mr. BRIGHT, surgeon, of Brighton, has forwarded to us a short paper on the powers of the ergot of rye in difficult labours and uterine hemorrhage. These are so fully admitted in the profession, that they do not need farther eulogy.

We extract, however, the following paragraph, which the age of the patient makes more interesting:—"I was sent for in haste to a poor woman, who was said to be bleeding to death. The case, on my entering the room, seemed to justify the report. The woman said her age was sixty, and that about six years since she ceased to menstruate. About a twelvemonth ago, she again became 'unwell,' and had so continued up to the present time. I found her literally bathed in blood, and immediately commenced with half-drachm doses of the secale cornutum: the following morning I saw her, found that all hemorrhage had ceased, and that she was still under the influence of the drug, which she described as producing pains like labour. She has been perfectly well up to the present date."

MALIGNANT CHOLERA.—CASE OF MR. JOHN STEPHENSON.—[To the communication from Dr. Weatherill, inserted in another part of the Journal, the following note was appended]:—"This case is mentioned in No. 470 of THE LANCET. Into the veins of this person I injected, in the space of thirteen hours, four hundred and eighty ounces of saline fluid, in the collapsed stage of the cholera, with success; but as the report was sent for publication before the patient had perfectly recovered, I think it necessary now further to state, that he got rapidly well, and has ever since enjoyed the best of health.—J. W."

"Liverpool, June 6, 1833."

NOTE FROM MR. WILLIAMS.

To the Editor of THE LANCET.

SIR,—On perusing your "Notices to Correspondents" last Saturday, I was not a little surprised to observe it stated that I was the author of certain questions put by a medical examiner to his pupil, published in THE LANCET of the preceding week. As I have never aspired to the unthankful, though perhaps to some the important, office of grinder, I must request the insertion in your next Number of this contradiction to that which appears to me to have been an *intentional* falsehood on the part of your informant. I am, Sir, your obedient servant,

J. WILLIAMS,
Apothecary to the London Hospital.

June 12, 1833.

[We give immediate insertion to Mr. Williams' note, but have not yet had time since its receipt to demand an explanation from our informant.—ED.L.]

Mr. George Graham is requested to call at our office.

The 2nd Fasciculus of Dr. Carswell's splendid work on Pathological Anatomy has just been published.

Z. Z. Z. The "Testimonials" of Mr. M. have been weighed in the balance.—The letters of *Mr. B. G. W.* and *Veritas* have been received.—The theory of *A. S.* is ingenious, but there is an "if" in the first proposition.—*Mr. D.* The announcement of Rayer was made by us a month since.—*Dr. J. C. W.* What was the object of the inquiries? The correspondents reached us too late for this week's Number.

The letter of Mr. ******, who wished his article to appear with an anonymous signature, did not reach us with his desire until *after* the article was published, as he is now probably aware. The B. is not connected with this office. The editor will be happy to receive early information on "medical affairs of interest," on every opportunity that may offer.

W. H. The report is an invention. We never either saw or communicated with Sir William in our life.

INQUEST AT HORNCASTLE.

LETTER FROM MR. WARD.

To the Editor of THE LANCET.

SIR,—Had you complied with my request, by publishing the notes of an inquest at Horncastle, as taken by a short-hand writer, you would scarcely, I think, have been favoured with Dr. Veitch's letter, inserted in your 508th Number.

What I have now to ask is, that you will circulate the accompanying pages uniformly with the ensuing Number of your Journal,* on the same principle as in your late offer to Dr. Lee, in his controversy with Dr. Granville. Such publication will afford Dr. Veitch an opportunity of using those means which he has by him, of proving what appears to me to be rather startling propositions. Of persons prevaricating I had often heard, and have, indeed, recently witnessed a most palpable illustration. But a prevaricated statement is I confess a novelty to me, as well as the circumstance of the whole of the same statement being true in some instances, and false in others. The elucidation of these points will, I should imagine, prove a sufficient task for even the Doctor's logical acuteness. The attributing of pitiful malignity to the investigation of a rare and most interesting phenomenon, by a large assembled body of his professional brethren (admitted by him on the inquest to be a number of the most respectable medical men of the county), affords an admirable criterion of Dr. Veitch's high estimate of the proper duties and pursuits of medical practitioners. It tallies also exquisitely with his most ingenious and apposite cross-examination of the nurse, as given in the notes of the inquest. I cannot resist this opportunity of thanking Dr. Veitch for his addition to the code of medical ethics. I have looked in vain into Percival and Gregory, for what the Doctor seems to consider the spontaneous offspring of right feeling in the breast of a medical man.

Rule.—When you suspect a medical brother of delinquency, go and consult the vicar of the parish. I can only say for myself, that I would not accept the vicarage of Horncastle, though the benefice is a good one, with such an addendum to its duties. Dr. Veitch appears to have flattered himself into an opinion, that it was wholly impossible he should have recognised the child in the circumstances under which it met his eye at the public-house. Now, setting aside the fact (which can be proved by the servant maid of the house), that the Doctor's cursory examination occupied a full quarter of an hour, he ought to be reminded that Mr. Bolton, who had formally been introduced to the infant under precisely the same circumstances as the Doctor, exclaimed immediately on seeing it again, "Why, here's an old acquaintance." The reason, too, of the dissection not being made, before the coroner summed up the case, arose from the firm and satisfactory conviction on the minds of the jury, that the child had not been destroyed, and from their unwillingness to subject themselves to a further infliction of the Doctor's rigmarole and desultory observations. I am, Sir, yours, &c.,

WM. WARD.

Horncastle, June 6th, 1833.

* The report was handed to our publisher, with directions that it should be printed and stitched with the wrapper of our present Number, on payment of the printer's costs.—ED L.

EXTRAORDINARY INQUEST AT HORNCASTLE.*

(*Vide* LANCET, Nos. 502, 508, and 511.)

AN inquest was held at the Black Swan Inn, in Horncastle, on Saturday last, before Mr. F. F. Goo, Gent., coroner, on the body of a female infant, which was found buried in a field in the occupation of Mr. William Ward, surgeon, situate in the parish of Horncastle. The circumstances which led to the inquiry had occasioned great excitement, not only in Horncastle, but for many miles round. The room was completely crowded with clergymen, gentlemen, and members of the medical profession, among whom were, Dr. Charlesworth, of Lincoln; Drs. Bousfield and Veitch, of Horncastle; Dr. L'Oste, of Louth; Dr. Snaith, of Boston; Mr. Barker and Mr. Walker, of Spilsby; Mr. Parish, of Burgh; Mr. Lomas and Mr. Snaith, of Horncastle; Mr. Probert, of Tetford; Mr. Lambden, of Coningsby, &c.

The coroner having sworn the jury (of which Mr. T. Armstrong was foreman), said, "Gentlemen, your first business will

* The name of the newspaper from which this report has been taken, has not been mentioned by our correspondent.—ED. L.

he to view the body of the child, which is lying on the table, and I believe there are gentlemen present who will give such evidence concerning it as will enable you to come to a proper conclusion as to the cause of its death."

The jury having taken a view of the body, the coroner proceeded to call evidence. The first witness was

Mr. Robert Whitton, who was interrogated by the coroner as follows:—

Coroner. You are a publican and constable at Horncastle?—Witness. Yes.

Cor. Was information conveyed to you, that a child was buried anywhere near that place?—Wit. Yes.

Cor. When did you receive the information?—Wit. A week since yesterday. Friday, the 15th inst.

Cor. Who informed you?—Wit. George Allbones.

Cor. Does he reside here?—Wit. Yes, he is in the house, and will give evidence if called upon.

Cor. What did he tell you?—Wit. He told me that a child was buried in Dr. Ward's paddock, in Horncastle.

Cor. Had he seen it?—Wit. I think he had, but I am not sure.

Cor. Did you go to the paddock, on receiving this information?—Wit. I went directly.

Cor. Did Allbones go with you?—Wit. Yes.

Cor. When you got to the paddock, did he point out the spot where the body of the child was buried?—Wit. Yes. There were three or four men working in the field, and a young man of the name of Pogson dug it up in my presence.

Cor. Was that the child (pointing to the body) which he dug up?—Wit. Yes.

Cor. Was it wrapped up when you first saw it?—Wit. Yes, it was wrapped in hay, and enclosed in an old cloth, and tied with some tar-band.

Cor. What did you do with it?—Wit. I brought it home into this room.

Cor. Did you leave it here?—Yes, and locked the door. I was going down to the magistrates' office to acquaint Mr. Clitherow with the circumstance, and ask him what was to be done.

Cor. What did you do with the key of the room?—Wit. I took it with me.

Cor. Did you go to the magistrates' office?—Wit. As I was going there I met the champion, and told him what had happened. He told me to go to Dr. Veitch, with his compliments, and request him to go and examine the child.

Cor. Did Dr. Veitch come and examine the child?—Wit. Yes.

Cor. Did you come with him?—Wit. No, he came directly after me, and I opened the door of the room where the child lay.

Cor. That (pointing to the body) was the child which Dr. Veitch saw, I suppose?—Wit. Yes.

Cor. Did Dr. Veitch examine it?—Wit. Yes.

Cor. Did he give his opinion about it? Wit. Yes.

Cor. What did he say?—He said at first that his opinion was, that the child had been destroyed.

Cor. Had you told him any of the circumstances?—Wit. I had told him that I found it buried, but I did not say where.

Cor. You said nothing about Mr. Ward?—Wit. No, not at that time.

Cor. When the Doctor gave it as his opinion that the child had been destroyed, what did he say about it?—Wit. He said his opinion was that it was a murdered child.

Cor. Then that was his opinion when he left you?—Wit. Those were his words.

Cor. Did Dr. Veitch leave you then?—Wit. Yes, he went to Dr. Madeley's, I met him there.

Cor. What did you go there for?—Wit. To be examined before the magistrate. The circumstance was named to the Rev. J. Dymoke, the Champion's brother, and likewise Dr. Veitch's opinion that the child had been murdered; and he stated he could not believe it as stated to him.

Cor. Did you go to the magistrates' office?—Wit. Yes, Dr. Veitch met me there, and Mr. Ward explained how the child had come to be buried there.

Cor. You say Mr. Ward explained the circumstance; did you all go to the magistrates' office?—Wit. I was there a good while before Dr. Veitch came, with Mr. Dymoke.

Cor. Then did you send for Mr. Ward?—Wit. Dr. Veitch went to see for Mr. Ward.

Cor. But how happened it that he went to seek him? You say he did not know that the child was buried in Mr. Ward's paddock.—Wit. I had told him, after he examined the body, the circumstance of its being found in Mr. Ward's paddock.

Cor. You say you were present when the case was brought before the magistrate? What did the magistrate say to it?—Wit. He said he was satisfied with what Mr. Ward said about having the body so long in spirits.

Cor. Then the affair was dismissed, and they ordered you to bury the child, did

they?—Wit. Yes, and I told them I would rather have nothing to do with burying it, they had better send again for Mr. Ward, to bury it.

Cor. What passed then?—Wit. Nothing more at that time.

Cor. Did you know any more about it?—Wit. In the evening the body was examined by Mr. Snaith, Dr. Bousfield, and Mr. Boulton, and afterwards Mr. Ward's servant came, and took it away, and I knew no more about it till yesterday.

Mr. Wm. Ward, surgeon, Horncastle, sworn.

Cor. Did you ever see that child before? (pointing to the body.)—Wit. Yes.

Cor. On what occasion did you first see it?—Wit. I was called upon to attend a woman in labour, and when I got to her, that child was born.

Cor. How long is that ago?—Wit. Two years and a half.

Cor. Where did the woman live?—Wit. At Horsington.

Cor. You say you found the child already born?—Wit. Yes, when I arrived, it was born.

Cor. Did the woman of whom it was born deliver herself?—Wit. No, a woman who lived in the town delivered her.

Cor. She was a woman who was in the habit of attending cases of accouchement I suppose?—Wit. Yes, she was.

Cor. Did you see the child?—Wit. I did. It was a very uncommon child to meet with.

Cor. Was it alive?—Wit. No, it was dead when I arrived, and the woman said it was born dead, and that she never saw it stir.

Cor. What was there peculiar in the appearance of the child?—Wit. A very remarkable malformation of the head.

Cor. What occurred between you and the mother on the subject?—Wit. I wished her to give me the child—I told the woman I thought it was impossible for it to have lived.

Cor. Did you think it was born alive?—Wit. I did not think it ever could have breathed.

Cor. Then, from the peculiar formation of the head, you wished to have the child?—Wit. Yes.

Cor. Whom did you ask for it?—Wit. I asked the mother, and after consulting with a few of her neighbours who were there, she said she had no objection, but she would ask her husband the question.

Cor. Then did you leave the place?—Wit. I was there about two hours, and then went away.

Cor. Did the husband consent to your having the child?—Wit. He was not present then; but when he came home they talked it over, and the husband refused to let me have the child.

Cor. When did you first find out that the husband declined to let you have it?—Wit. I think the following day, when I went the second time to the mother.

Cor. Did the husband tell you himself?—Wit. No; but he told the woman, and she communicated it to me.

Cor. What happened afterwards?—Wit. The matter dropped, and I never thought any more of it until about a week afterwards, when several people in the town thought it was proper that the doctor (as they called me) should have the child, on account of its peculiar deformity, and at that time, three or four days or a week after the birth, very much to my surprise, a man brought it to me. I did not employ the man to bring it, neither had I the slightest idea that it would be brought to me. It was quite unexpected, and I did not pay him anything for it. I gave him a crust of bread and cheese, and a little beer, and resolved not to give him more than that, in order that there might not be any foundation for saying that I had encouraged or bribed the man to procure me the child.

Cor. Did you show the child to any one?—Wit. Yes; Dr. Veitch came to my house, and saw the child; and Mr. Bolton saw it too. I had never before, in the course of my practice, met with such a monster, and Mr. Boulton lent me a jar to preserve it in, as a curiosity.

Cor. Nothing further passed, I suppose, at that time?—Wit. No, and I kept it in spirits until the other day. When Dr. Veitch first saw it, he desired me to send it to the College of Surgeons, as a peculiar specimen of malformation, which I declined doing.

Cor. Then you kept it yourself?—Wit. Yes, I put it into spirits, and kept it from that time until last Monday week, the 11th inst.; when, finding that the spirit had evaporated, and spoiled it for a preparation, I took it into my field and buried it. When I arrived at the field, where I had three or four men at work, I drove into it, and alighted. I then told one of the men to dig a hole.

Cor. What is the man's name?—Wit. Francis Belton.

Cor. Did you wait while he dug the the hole?—Wit. Yes; I then threw it in, and said "Cover it up, and it will do," thinking no more about it, and went away. I never thought any more of it until last Friday the 15th, when a great alarm had been given in the neighbourhood about

the child having been found buried in my paddock. When I left the paddock, after having told the man (Belton) to cover the body up, a lady who was with him asked my servant what it was, and he said he did not know.

Cor. Did your servant know what it was?—Wit. No, I never thought of telling him; in fact, I did not think anything more about it until the 15th.

Cor. What occurred on that day?—Wit. Dr. Veitch called at my house; I was not at home; I afterwards saw Dr. Veitch, and in consequence of what he said to me, I went to the magistrates' office, and met Mr. Dymoke there: I told him the whole circumstances relating to the birth of the child, its being in my possession two years and a half, and my having buried it in the field; he expressed himself perfectly satisfied, and convinced in his own mind that it was not, as Dr. Veitch had stated, "a murdered child."

Dr. Veitch here made some contradiction to the statement of his having said it was a "*murdered* child." He said, "Upon the cursory view I took of the body, the face being flattened, the back of the head being covered with blood, the navel string being tied (and perhaps some persons present might think it was tied too near the body), and the circumstances of the child being found buried in a field a mile out of the town—all these combined induced me to be of opinion that the child was born alive, and that it had been *destroyed*." Dr. V. was proceeding further to explain the appearance of what he took at the time to be a wound on the back part of the head, when

The Coroner said, "There is no medical question in the case yet; we have not come to the medical point: I am now only examining these witnesses to get at the *facts* of the case."

Dr. Veitch. "I am in some way implicated in this affair, and if Mr. Ward is permitted to make observations respecting me, I beg that I may also be heard."

The Coroner. "Certainly you will; but at present you are not at all implicated; if anything should hereafter turn up to implicate you, of course you will be heard; but the jury have nothing to do whatever with any private affair between you and Mr. Ward."

The Coroner to the Witness. Was Mr. Dymoke present when Dr. Veitch said it was his opinion that the child was murdered?—Wit. Yes, he was.

Dr. Veitch. I hope Mr. Dymoke is summoned.—The Coroner. He is in town, and will be at hand if wanted.

The Coroner then read the deposition of Mr. Ward: when the statement that Mr. Ward did not give the man who brought him the child anything more than a glass of beer and some bread and cheese, being omitted by the coroner, witness requested that he would be so good as to insert it.

The Coroner. I do not see that it is necessary.—Wit. I merely wish for its introduction, as it regards my character; that it may be known that I am not in the habit of buying bodies, or encouraging or bribing men who are in the habit of selling dead bodies.

The Coroner then made the addition.

The next witness called was,

Charlotte Wright, to whom the coroner was about to administer the oath, when

Dr. Veitch rose and said, "I hope I may be permitted to speak—I was not the least aware of this inquest being held; I had not the proper notice of it, and it seems to me to be a party matter, which has been got up partly out of some motive against me. I am implicated in this matter, and I think I ought to have had the same notice as other persons concerned in it, because the witnesses I should call, and the questions I should put to Mr. Ward and Mrs. Wright, would give the affair a turn which might be little expected. I have no motive, no bad feeling against Mr. Ward, nor any man living: but I will not suffer Mr. Ward, nor any man alive, to trample upon me with impunity.

The Coroner. "As I said before, we have not anything whatever to do with this affair between Mr. Ward and Dr. Veitch:—it is a private matter of their own. We are met here on the part of the King, to inquire into the cause of the death of this child, and for no other earthly purpose."

Charlotte Wright was then sworn.

Cor. Are you a married woman?—Wit. Yes, I am a widow.

Cor. You live at Horsington, do you?—Wit. Yes.

Cor. About two years and a half ago, were you called upon to attend a woman named Chapman?—Wit. Yes.

Cor. She was in labour, I suppose?—Wit. Yes.

Cor. Are you accustomed to attend on such occasions, when necessary?—Wit. Yes.

Cor. When you went there did you deliver her of a child?—Wit. Yes, I did.

Cor. What sort of a child was it?—Wit. It was a very frightful child, Sir.

Cor. Was it living?—Wit. No, Sir, I believe not. I will not swear it never breathed in my hands; I am not positive about that: but I am positive, that at the five minutes end it never breathed.

Cor. Were you there when Mr. Ward, the surgeon, came?—Wit. Yes.

Cor. What passed when Mr. Ward came?—Wit. I don't know that anything particular passed; the child was dead, and had begun to get cold before he arrived, which I should think was an hour and a half after the birth.

Cor. What was there about the child to render it so frightful?—Wit. Why, I can hardly say. Its eyes, and ears, and the back of its head, were very frightful to look at. It did not appear that there were any bones about its head, but it was all like a cake of blood.

Cor. Do you think that this is the same child which is produced here to-day?—Wit. (Without looking at the body.) Oh, I am sure I can't say.

Cor. Examine it, and then you will be able to tell, perhaps?—Witness examined the body, and said, "Oh, Sir, there is not the slightest doubt in the world but that it is the same. I am sure of it."

Dr. Veitch cross-examined the witness as follows:—

Dr. V. Did you deliver this woman?—Wit. Yes.

Dr. V. Did you tie the naval string?—Wit. Yes, I did. I told you at Horsington that I did not, but I was so flurried at the time, that I forgot it; but I recollect that I *did* tie it.

Dr. V. Will you swear that it was not born alive?—Wit. No, I won't.

Dr. V. You won't swear it was born dead, will you? Now mind, you are on your oath?—Wit. No, I won't, Sir; I can't say, but I am sure that at five minutes' end it was dead.

Dr. V. Did not Mr. Ward try to bring it to life? Now recollect, you are on your oath?—Wit. He looked over it, and turned it over; so I thought, perhaps, he was trying to bring it about, and we said we were sure he need not try, for it was dead.

Dr. V. Were you ever present at the birth of a child named Melton?—Wit. Yes.

Dr. V. Was that child ever buried?—Wit. I don't know.

Dr. V. Upon your oath, now, do you not know?—Wit. I do not know, Sir.

Dr. V. Do you recollect anything about a coffin?—Wit. Yes.

Dr. V. Was there anything in that coffin?—Wit. I should think the child was in it.

Dr. V. Now, will you swear you do not know the child was not given away to anybody?—Wit. I will swear that I never gave it to anybody.

Dr. V. Will you swear that Melton's child was not given away?—Wit. I will swear that I never gave it away; I believe Meltons gave their child to Morley, and I should think Mr. Morley has it now in spirits.

Mr. Ward. That was a premature child of Melton's.

Coroner (to Mr. Ward). You do not know anything of that child I suppose?—Mr. W. Yes, I was in partnership with Mr. Morley at the time.

Cor. I really cannot see that the jury have anything to do with this child of Melton's.

Dr. Veitch (to the witness Charlotte Wright). Were there any other persons present besides yourself when this child (Chapman's) was born?—Wit. Yes, Mrs. Roberts, Mrs. Coo, and Mrs. Bowering.

Cor. Did any of the women faint at the sight of the child?—Wit. Yes, Mrs. Bowering.

Cor. There has been something said about a child of Melton's; I suppose it has nothing to do with this business. Pray how long is it since you delivered Mrs. Melton?—Wit. I think it is four years since this winter.

The Coroner then called Dr. Veitch, and said, "I merely call you as a witness because your name has been introduced to me as the person who saw the child at Ward's house, soon after the birth; and not to give your opinion on any medical point. We have not anything to do with medical skill at present. Now, when Mr. Ward called upon you to look at this child, you went?"—Dr. V. Yes, I have a faint recollection of having seen a child at Mr. Ward's house, and it is possible, and almost probable, for me to have seen this child there; but my recollection on the subject is so faint, that I really cannot say it was that child, nor can I say it was not.

Cor. If the child which you saw was, as Mr. Ward stated, such a great curiosity, should you have forgotten the circumstance of your having seen it?—Wit. It is possible that I should have forgotten it, but I cannot swear one way or the other.

Cor. Then, although you have some faint recollection of having seen a child at Mr. Ward's, you do not assert that the one now produced is the one which you saw?—Wit. I do not. I cannot call to my recollection my having seen the child now produced, although I have some faint recollection of having seen a child at Mr. Ward's.

Cor. There is another fact to which I shall call your attention. I am speaking in reference to your having seen the child the other day. It is said that you stated it was a murdered child. Is it true that you said so?—Wit. I did not give a decided

opinion; I believe I said that, from certain circumstances and appearances, it seemed to me that the child had been destroyed; and with your permission I will state what those circumstances and appearances were. I know there are circumstances relating to this matter which seem to implicate myself; yet I have no earthly connexion with any person in the business. I had not notice of this inquest—I came here only as a witness—I expected the matter was settled before the magistrates—and I knew no more of the subsequent proceedings in this matter than the man in the moon. I was sitting in my own house on Friday the 15th—Mr. Dymoke was with me—and Mr. Whitton the constable called me out of the room. He said I was requested by the Champion to go down to his (Whitton's) house, to examine the body of a child. The Champion said he could not act as a magistrate, as he was the high-sheriff. I then told Mr. Dymoke, who was with me, what had passed between Whitton and myself, and he said he was going down to Dr. Madeley's, and if I would go and examine the child, we should then see what was to be done. Consequently I came here, and found a bundle containing some hay, and a child of full age. I saw the navel-string tied, and improperly tied. I saw bruises upon the head, and bruises upon different parts of the body. Mr. Whitton told me he found it buried in a field, a mile out of the town; and considering all these circumstances, I said, "It appears to be a child that was born alive." I believed it has come to its full age, and I believe it has been destroyed, but I said I will not examine it minutely at this moment—I will consult with Mr. Dymoke about it. Mr. Whitton then said to me, the persons who buried this child are Mr. Ward and Mrs. T. Fawcett; they were seen to drive into the field, take out a parcel, and bury it. I said I was very sorry to hear that Mr. Ward was implicated in a matter of this sort, but I would go to Mr. Dymoke and to Mr. Ward, and I had no doubt but that Mr. Ward would satisfy us that there was nothing criminal on his part. After a cursory examination of the child, I went to Dr. Madeley's, where I saw the Doctor and Mr. Dymoke, and told them what I had seen—that the body had the appearance of having been born alive, of having breathed, and of having been destroyed. Dr. Madeley, Mr. Dymoke, and myself, agreed that the most proper, the most kind and friendly thing, that could be done, would be for me to go to Mr. Ward, and acquaint him with the circumstance, for I thought probably that Mr. Ward had been obliged to perform an operation on the child, to facilitate labour, which is sometimes the case. I went to Mr. Ward's, and they told me he was not at home, he was gone to attend some one who was ill. I went to his house a second time, and afterwards met with him—I asked him for an explanation of his reasons for having buried the child in the field. He laughed, and said it was a child he had had in spirits for three or four years, and gave me a satisfactory explanation of the whole affair. I then went to the magistrates' office, and told them that Mr. Ward had given me a perfectly satisfactory account of the child, and it was then ordered to be buried again. The next day I was surprised to hear that Mr. Clitherow, the magistrates' clerk, was not satisfied with the evidence and opinion I had given. He instituted a second inquiry, and three medical gentlemen gave an opinion contrary to the opinion I had given; they said (at least as I have been told) that the child never had lived, and that the opinion I had given was a wrong one. On the Monday following I was called to Horsington, and I was then informed, for the first time, that the child came from Horsington churchyard. I declare I have no vindictive feeling towards Mr. Ward, or any person living; on the contrary, I have treated him with more than due courtesy in this business, and I do say that the same measure of courtesy has not been dealt out to me.

The Coroner again intimated that the jury had nothing to do with any affair of courtesy between Dr. Veitch and Mr. Ward.

Dr. Veitch continued—I will prove to you, that my acting towards Mr. Ward has been anything but hostile; he explained the matter to me, the body was ordered to be buried, and I expected the matter would have ended there; but when I am summoned here, and see so many respectable medical men assembled, I confess I am at a loss to know what is the reason of their being called together. If I had been treated with the courtesy which I deserved, instead of three other medical men being called in, and an opinion given at variance with mine, I should have had an opportunity given me of stating my opinion, on a more minute examination.

Cor. Yes, but it appears you did not give a decided opinion, but left some doubt on the subject.—Dr. V. No, but my opinion is, that that child was born alive, that it has come to its full growth, and that it lived; I cannot say how long.

Cor. But it seems you did not at all examine it to ascertain whether it was a child born alive or not.—Dr. V. I only

offered an opinion on a cursory examination, and a consideration of the circumstances as they were related to me, that the child was born alive, and had been destroyed.

Cor. Now that you have re-examined the body, do you still entertain an opinion that it was born alive, and that it has been destroyed?—Dr. V. No, certainly not. I believe that the child breathed, but I certainly have no idea that it was destroyed by ill treatment.

Cor. The only question I want particularly to ask you is, whether you recollect seeing the body of the child at Mr. Ward's house?—Dr. V. No, I cannot be positive one way or the other.

Francis Belton sworn.

Cor. When Mr. Ward brought this child to you to be buried in the field, did you know what it was?—Wit. No.

Cor. Who was with Mr. Ward?—Wit. Mrs. Fawcett.

Cor. He called you to him, did he?—Wit. Yes.

Cor. Had you a spade in your hand?—Wit. I had a shovel.

Cor. What did he tell you to do?—Wit. He said I was to make a hole, which I did, and he dropped a bundle into it, and told me to cover it up.

Cor. Did you cover it up?—Wit. Mr. Ward had dropped it in sideways, and I laid it flat, and then covered it up.

Cor. Did you know what it was when you laid it down straight?—Wit. No.

Cor. Did you take it up again?—Wit. No.

Mr. Barnard James Bolton, of Horncastle, surgeon, sworn.

Cor. Do you recollect being called upon by Mr. Ward, about two years and a half ago, to look at a child?—Wit. Yes.

Cor. Did you see the child?—Wit. Yes.

Cor. Was Dr. Veitch present with you?—Wit. He was. (Mr. B. then identified the body.)

Cor. Is it in the same condition now as it was then?—Wit. It is, with the exception, of course, that it was then fresh, and that decomposition had not taken place.

Cor. From what you saw at that time, were you satisfied that the appearance of the head was not occasioned by any mutilation or ill-treatment, but that the child was born in that state?—Wit. There is no appearance of violence being done to the head, because the arched part of the skull is firm and uninjured. Had the skin been severed, it would have presented an abrupt and raw edge—whereas it is rounded off, as it were, and the red bloody-looking membrane covering the bony part of the head, is continuous from it, and not lacerated.

The Coroner. Gentlemen of the jury you will please to pay attention to this—it is very important, as Mr. Boulton's evidence goes to prove that no person did destroy the child.

Mr. Boulton resumed.—When I saw the child at Mr. Ward's, I passed a probe down the spinal canal, and found it was quite empty, and that not a particle of spinal marrow could be discovered: there appeared to be no connexion between the head and the spinal canal. Even if the child's head had been opened, as is sometimes the case, to expedite labour, the bones of the skull must have been broken. There is no appearance either of any neck;—the head is close and fast between the shoulders, from having no connexion with the spinal column.

Cor. Are you sure this is the same body you saw at Mr. Ward's?—Wit. Yes; and I should say, that no one could see it once without being able to recognise it a second time.

Cor. Are you perfectly satisfied that the formation of the child is such, that it could not have lived, at least only a very short time?—Wit. I would not undertake to say that the child did not breathe; but it could not have lived for any length of time.

Cor. You were invited by Ward to go to his house and look at the child?—Wit. Yes, and I gave him a jar to preserve it in.

Cor. Then it is from the peculiar formation of the child that you are satisfied its death was not occasioned by any external violence?—Wit. Certainly. The appearances have not been occasioned by any external violence. The child, I repeat, could not have lived for any length of time; but whether it ever breathed or not I cannot say, because I have not yet examined the internal structure.

Cor. Had you any difficulty in knowing the child again, when you saw it here?—Wit. When I came into the room I recognised the child immediately.

Dr. Veitch. I firmly believe now, that the child was no more murdered than I am at this moment.

Cor. Then as a medical man, you state it as your opinion, that if you had examined the body as you now have, you would have felt perfectly satisfied that the child had not come to its death by any ill treatment, or anything of that sort?—Dr. V. Yes, I certainly am satisfied that it cannot have been murdered.

[Dr. Veitch then related the circumstances attending the affair at great length; but the jury said that his statements had not anything to do with the question be-

fore them, and begged, that as their time was valuable, they might be dismissed as soon as possible.]

Mr. Ward. Dr. Veitch has accused me of having acted uncourteously towards him. I declare that I never thought of saying a word more about the matter, until the other day when I passed through Horsington, and was told that Dr. Veitch had been to the mother of the child, and to other persons, making every possible inquiry, and stirring the matter up afresh, until a prejudice had been excited against me, on the ground of its being suspected that I had been instrumental in destroying the child.

Dr. V. I perfectly acquit Mr. Ward of anything of the kind.

Mr. Ward. When you were at the magistrates' office, you said it was a murdered child with the head cut off above the ears; which raised a report that was operating very much, and likely to operate very much, against my character as a professional man; and you must be aware how unpleasant it was for me to be assailed in the public market on the following day with all the disagreeable insinuations that such an injurious report had occasioned, until the whole neighbourhood was in an uproar, as it was, against me.

Mr. Ward continued—When I found that Dr. Veitch was taking secondary steps, I thought it was a pity but that the business might drop, and, as I told him, I was perfectly unaware of any medical man being sent for besides himself; but he said, "I don't care, I shall not let it drop;" and I replied, "You may go to your purpose, and do as you please." It was my intention to drop the thing *in toto*; but Dr. Veitch said he would let me know that his opinion was as good as Dr. Bousfield's, Mr. Snaith's, and Mr. Bolton's, and perhaps better.—Considering the hostility that was thus manifested towards me, I was assured that my medical character was at stake, and it cannot be a matter of surprise to any one, that I felt it to be a duty I owed to myself, to my wife, and to all around me, to vindicate my character in a proper manner; for, as Shakspeare says,—

"Who steals my purse, steals trash; 'tis something, nothing;
'Twas mine, 'tis his, and has been slave to thousands:
But he that filches from me my good name,
Robs me of that which not enriches him,
And makes me poor indeed."

Mr. Ward sat down amid the applause of many gentlemen present.

Mr. Clitherow, solicitor and clerk to the magistrates, said he had heard Dr. Veitch declare that he would call an inquest, and in making the declaration, he said he would be d—d if he did not. He (Mr. Clitherow) was anxious to have the matter dropped; but in consequence of his having heard it said that there was "*blood upon it*," he was determined to have it bottomed.

Some further conversation took place between Mr. Ward and Dr. Veitch, but it was wholly of a private nature. Dr. Veitch complained of not having had notice of the inquest. Mr. Clitherow said he had given Dr. Veitch the proper notice; and Mr. Ward said that Dr. Veitch had as much notice of the time of holding the inquest as he himself had.

Mr. Ward. I wish the coroner to ask every medical gentleman present, whether there is any appearance of violence; as Dr. Veitch has said there is.

Dr. Veitch. I do not say anything of the kind.

Mr. Ward. I wish the medical gentlemen to say whether, on first casting their eyes upon that body, they distinguish any appearance of violence or wrong treatment.

The Jury, wishing to ascertain whether any medical gentleman present differed with Mr. Bolton in anything he had advanced, the Coroner put the question—when no gentleman offering a different opinion to that of Mr. Bolton, Dr. Charlesworth was especially called upon by the coroner and other gentlemen to give his opinion on the subject.

Dr. Charlesworth. I see nothing in that body to induce a medical man to say that child was murdered.

Mr. Samuel Curtis Lomas, surgeon. The child has every appearance of having been born in its present state; for I have had two similar cases myself.

The Jury immediately returned a verdict "*That the child died by the visitation of God, and not in consequence of any hurt or injury received from any person or persons whatsoever.*"

After the Jury had delivered in their verdict, a *post-mortem* examination took place in the room, by Mr. Bolton, in the presence of Dr. L'Oste, Dr. Bousfield, Dr. Snaith, and a number of medical gentlemen who attended the inquest; when it was found that there was a *total absence* both of brain and spinal marrow; that the lungs were extremely small, and as firm and solid as the substance of the liver, thereby showing that they could never have been inflated, and, consequently, that the child had never breathed.